



# Equity Valuation

Fresenius Medical Care AG & Co. KGaA

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## **Abstract**

**Name of Dissertation:** Equity Valuation Fresenius Medical Care AG & Co. KGaA

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**Keywords:** Equity Valuation, Dialysis, Discounted Cash Flows

This dissertation primarily aims to determine a target share price for Fresenius Medical Care, a Germany-based dialysis services and dialysis product provider. The company recently faced several macroeconomic headwinds, namely Covid-19, labour shortage, and inflation, lowering its profitability and thus decreasing the attractiveness for shareholders. In response, the company's management issued a transformation program in 2020, which is expected to be completed by 2025. Main valuation methodologies applied are Discounted Cash Flows and Comparable Company Analysis, capturing the firm's fundamental value with an infrastructure like business model, and reflecting the market perception of the industry's prospects.

Following the assumptions, the DCF reveals an intrinsic value of EUR 49.96 for the 31st of December 2022, representing an upside potential of 63% to the year-end share price of EUR 30.57. A limitation is certainly the yet-to-be-proven benefits related to the transformation program. Nevertheless, managements communicated goals appear to be realistic, given the company's past financial track record with EBITDA margins between 19% and 22% (FY19A-FY21A) and unparalleled market position. In line with the derived share price is the company's current stock price (as of 31st of March 2023) of EUR 39.1, showcasing a 28% increase in the first quarter. Considering even the new share price, the upside potential is still 28%, leading to a strong buy recommendation. In addition, the trading level of comparable companies and conducted sensitivity analyses support this opinion.

## Resumo

**Nome da dissertação:** Avaliação de Equity Fresenius Medical Care AG & Co. KGaA

**Nome do autor:** Philipp Alexander Beissel

**Palavras-chave:** Avaliação de Ações, Diálise, Fluxo de Caixa Descontados

Esta dissertação tem como objetivo principal determinar um preço-alvo para as ações da Fresenius Medical Care, uma empresa sediada na Alemanha que fornece serviços de diálise e produtos para diálise. Desafios recentes, como Covid-19, escassez de mão de obra e inflação, afetaram sua lucratividade e atratividade para acionistas. A administração lançou um programa de transformação em 2020, previsto para ser concluído até 2025. As principais metodologias de valoração são Fluxos de Caixa Descontados e Análise de Empresas Comparáveis, refletindo a percepção do mercado e o valor fundamental da empresa.

Com base nas suposições, o Fluxo de Caixa Descontado indica um valor intrínseco de EUR 49.96 em 31 de dezembro de 2022, potencializando uma valorização de 63% em relação ao preço de EUR 30.57 no final do ano. A limitação é a falta de comprovação dos benefícios do programa de transformação. No entanto, as metas comunicadas pela administração parecem realistas, considerando o histórico financeiro da empresa, com margens de EBITDA entre 19% e 22% (FY19A-FY21A) e uma posição de mercado excepcional. O preço atual das ações em 31 de março de 2023 é EUR 39.1, um aumento de 28% no primeiro trimestre. Mesmo com o novo preço das ações, há um potencial de valorização de 28%, indicando uma forte recomendação de compra. O nível de negociação de empresas comparáveis e as análises de sensibilidade corroboram essa opinião.

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## **List of Abbreviations**

ADR- American Depository Receipts

APAC- Asia Pacific

APD- Automated Peritoneal Dialysis

APV- Adjusted Present Value

ARF- Acute Renal Failure

BPS- Basis Points

BR- Brazil

BV- Book Value

CAGR- Compound Annual Growth Rate

CAPD- Continuous Ambulatory Peritoneal Dialysis

CapEx- Capital Expenditure

CAPM- Capital Asset Pricing Model

CARES- Coronavirus Aid, Relief, and Economic Security act

CCA- Comparable Company Analysis

CCC- Cash Conversion Cycle

CKD- Chronic Kidney Disease

CMS- Centers of Medicare & Medicaid

CN- China

CTA- Comparable Transaction Analysis

D&A- Depreciation & Amortization

DCF- Discounted Cash Flow

DE- Germany

DIO- Days Inventory Outstanding

DPO- Days Payables Outstanding

DSCR- Debt Service Coverage Ratio

DSO- Days Sales Outstanding

EMEA- Europe, Middle East, Africa

ESRD- End-Stage Renal Disease

EV- Enterprise Value

EV/EBITDA- Enterprise Value/Earnings before Interest, Taxes, Depreciation & Amortization

FCFE- Free Cash Flow to Equity

FCFF- Free Cash Flow to the Firm  
FME- Fresenius Medical Care  
HD- Haemodialysis  
IMF- International Monetary Fund  
ISCR- Interest Service Coverage Ratio  
MV- Market Value  
NCWC- Non-Cash Working Capital  
Net Working Capital- NWC  
OpEx- Operating Expenses  
P/E- Price/Earnings  
PD- Peritoneal Dialysis  
PmP- Per Million Population  
PP&E- Property, Plant, & Equipment  
R&D- Research & Development  
RCF- Revolving Credit Facility  
ROIC- Return on Invested Capital  
RoU- Right of Use  
SG&A- Selling, General, & Administrative  
TV- Terminal Value  
US- United States  
WACC- Weighted Average Cost of Capital  
YTM- Yield to Maturity

## **1. Introduction**

Equity valuation reports deliver condensed information and detailed analyses of markets and companies to private and institutional investors searching for potentially attractive investment opportunities. Therefrom, gained insights and perspectives can influence investors' perceptions and thus impact companies' stock prices.

Due to Covid-19 and the increasing prevalence of non-communicable diseases with federal health programs and private health insurances covering occurring patient costs, the healthcare industry gained significant importance over the past years. Especially the dialysis market with an annual spending of USD ~36bn by the US government has gained interest from statutory bodies, patients, and investors seeking solid and stable investment opportunities. Therefore, this dissertation aims to value Fresenius Medical Care (hereafter referred to as "FME"), the vertically integrated dialysis services and product market leader.

The valuation summary and conclusion is presented hereafter to provide a concise research and evaluation snapshot to enable the assessment of value and relevance of findings before delving into the underlying information.

The remaining paper is structured into six chapters. First, main company valuation methods are introduced and discussed. Afterwards, the dialysis market's structure, dynamics, and drivers are elaborated. Third, Fresenius Medical Care is analysed in terms of history, business model, organisational structure, and key strategic initiatives. Then, historical financial performance indicators are scrutinized based on their development over the last four years.

The fourth chapter puts the previously developed commercial and financial components into context to build sound assumptions about the company's prospects in a financial statement forecast. Finally, the paper culminates in the valuation of FME as of 31st of December 2022 with a transmission towards the stock price development since the beginning of 2023 and ends with a comparison to an equity report issued by Credit Suisse.

## 2. Valuation Summary and Conclusion

**Fresenius Medical Care AG & Co. KGaA**

**“Tough Times make Champions”**

Healthcare Services & Products

Ticker: FMEG.DE

Target Price: EUR 49.96

Recommendation: **Strong Buy**

**Valuation Summary:** The DCF analysis yields through the FCFF and APV methods an average share price of EUR 49.96 with a terminal growth rate of 2% as of 31<sup>st</sup> of December 2022. This constitutes an upside potential of 63% compared to the year-end share price of EUR 30.57 and an upside potential of 28% considering the share price of 31<sup>st</sup> March 2023. The trading level of comparable companies indicates an average share price of EUR 60.92, thereby exceeding the intrinsic valuation and confirming the results. Additionally conducted sensitivity tables reveal an even higher upside potential.

**Investment Recommendation:** The current share price rally of +28% between the end of December 2022 and the end of March 2023 underpins the perceived market opinion regarding the stock’s potential upswing and current undervaluation. For these reasons a strong buy recommendation is proposed.

**Catalysts:** The increasing prevalence of non-communicable diseases, the decongestant Covid-19 effect, improved access to healthcare in emerging markets, and rising disposable incomes positively shape the dialysis market outlook. Moreover, the company’s transformation program is anticipated to amplify future, profitability coined, growth.

**Headwinds:** Inflation, healthcare labour shortage, and rising interest rates impose several challenges on the company. Furthermore, the transformation program must yield measurable benefits for shareholders.

### Company Profile

Fresenius Medical Care is a vertically integrated provider of dialysis services and products, which generated revenue of EUR 19.4bn in 2022. The company operates a network of 4,116 dialysis clinics in over 50 countries, treating 344,000 chronically ill patients with dialysis. Corresponding products (e.g., haemodialysis machines, cyclers, solution bags) are sold to third parties and utilized in own clinics.

### Key Facts:

CEO: Helen Giza

IPOed: 1996

Headquarter: Bad Homburg (DE)

### Market Data EUR (2022):

Year-End Market Cap.: 8.97bn

NOSH (m): 293.4m

Year-End Share Price: 30.57

Year High/ Low: 63.56/ 26.26

Dividend per Share: 1.12

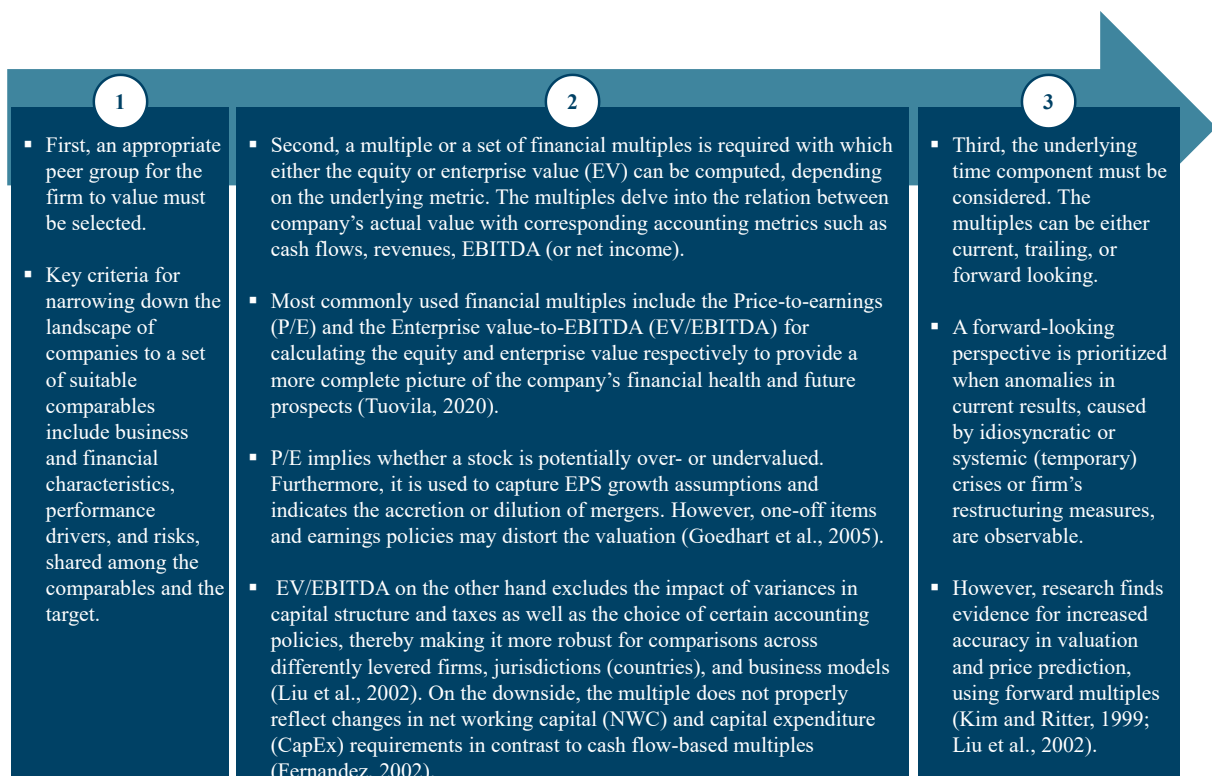
### 3. Theoretical Background

The subsequent literature snapshot endeavours to provide an extensive overview of the commonly employed methods for valuing a firm and, in the case of listed companies ultimately the respective share price and to evaluate their relative advantages and disadvantages. These paragraphs culminate with an analysis of the most appropriate methods for evaluating the characteristics of FME.

#### 3.1 Multiples – Relative Valuation

Multiples determine a company’s value by following an analogue approach based on market prices of similar firms. This method aims to establish a relationship between prices from a benchmark of comparable companies or transactions and their respective accounting measure from a determined point in time (Massari, Gianfranco, & Zanetti, 2016). This relationship, expressed through a multiple, is afterwards applied to the internal metric of a (“target”) firm to determine its corresponding value via simple multiplication. Several steps need to be undertaken to conduct a relative valuation, each outlining a crucial component, highlighted in the illustration below.

Figure 1 Process of Conducting a Relative Valuation



Sources: Kim & Ritter, 1999; Liu et al., 2002; Fernandez, 2002; Goedhart et al., 2005; Tuovila, 2020

Embedding the described components (peer group selection, multiples, and time) into the context of either the stock market or the market for corporate control, two common types of relative valuation analyses can be extrapolated, namely Comparable Company Analysis (CCA) and Comparable Transaction Analysis (CTA). The former type is based on stock multiples from listed companies, representing the stand-alone value of a company and correspondingly of the benchmark of peer group companies. The latter type is centred around gathering deal multiples for a set of comparable transactions, arising from completed (historical) acquisitions and the therewith negotiated market prices for companies. The difference in valuation results between CCA and CTA is further highlighted in [Appendix 1](#).

Overall, there are several advantages and disadvantages related to the relative valuation method. On the one hand, it is highly popular among practitioners, as demonstrated by Damodaran (2009), showcasing a ten-times higher usage than DCFs in 2001. The benefits entailed are time and resource savings and ease of comprehension. On the other hand, there are also shortcomings. Multiples have a high exposure towards the (current) market environment and are subject to the practitioner's choice of metric(s), as well as choice of comparable companies (peer group). Therefore, DVFA (2012) argues that the market-based valuation should underpin the DCF results with the necessity to justify outliers as both approaches are expected to yield results in a similar range.

### **3.2 Discounted Cash Flow – Intrinsic Valuation**

The Discounted Cash Flow (DCF) analysis is a fundamental valuation methodology built on the premises that the value of a company can be derived from the present value of its projected (free) cash flows, thus relying on the intrinsic value of the respective asset and therewith being less exposed to (capital) market distortions in contrast to the multiples approach. For the DCF method, three crucial interdependent inputs are required: the cash flow, the time horizon, and the discount factor. The most commonly used cash flow is the free cash flow to the firm (FCFF), available to both equity and debtholder of the firm. It is projected using a variety of assumptions and judgments about the company's expected financial performance regarding profitability, investments, NWC, liquidity, and capital requirements. This projection is done for a detailed planning phase, based on the company's recent financials, strategic (short-term) initiatives, market trends (etc.). Therewith, an integrated financial model is created over the period of five

to ten years. The length of the explicit forecasting horizon depends largely on the sector and development stage of the company but also on the current market environment.

To model the down-streamed period, capturing the firm's remaining value beyond the explicit projection phase, a terminal value (TV) is determined. This is further due to the inherent difficulties in adequately projecting company's financials over an extended period. FCFF and TV are then discounted using the weighted average cost of capital (WACC), reflecting the company's business characteristics and financial risks appropriately. Summarizing the present values of both parts determines the company's enterprise value (EV).

The DCF methodology furthermore offers an alternative angle on the firm's value. By discounting the free cash flow to equity (FCFE), the cash flow only available to equity holders, with the levered cost of equity and subsequently aggregating it with the present value of the TV, the firm's equity value is computed. Adjusting the equity value by adding net debt, the market value (MV) of minorities, pension provisions, and subtracting the MV of surplus assets results in the corresponding EV (and vice versa).

However, the DCF analysis entails in both approaches a noteworthy trait. Assumptions made for the discount factor and TV substantially impact on the results and are more sensitive to changes than the cash flow projection.

The following sub-sections will further elaborate on the methods utilized in this thesis to determine the target's EV: FCFF and Adjusted Present Value (APV). Complementary valuation approaches, reflecting the equity angle of the DCF in the form of FCFE and Dividend Discount Model are thoroughly discussed in the [Appendix 2 and 3](#).

### 3.2.1 FCFF

The underlying premises of the FCFF is that the business has paid all its operating expenses (OpEx) and covered its capital investment requirements with the remaining cash being available to the firm's equity and debtholders either for distribution or reinvestment in the company (Pinto et al., 2014). Therefore, the FCFF equals the unlevered free cash flow since it is attributable to all claimholders.

$$FCFF = EBIT (1 - t_c) + D\&A - CapEx + /- \Delta Change \text{ in } WC \quad (1)$$

$$EV = \sum_{i=1}^n \frac{FCFF_i}{(1+r_{WACC \text{ (after tax)}})^i} + \frac{TV}{(1+r_{WACC \text{ (after tax)}})^n} \quad (2)$$

While the unlevered free cash flow does not entail principal repayments on debt nor the tax advantages arising from interest payments, these factors get incorporated in the discount factor, namely WACC. The (after-tax) WACC recognizes the firm's capital structure and tax implications.

### 3.2.2 APV

The APV method is based on the concept of valuing a firm as if it is unlevered by calculating a firm's PV of expected unlevered cash flows through discounting them with the unlevered cost of equity and then adjusting for the implications of debt capital by adding the PV of the interest tax shield (ITS), arising from tax benefits of interest paid on debt, and subtracting the expected financial distress costs related to the borrowing of money.

$$EV = \sum_{i=1}^n \frac{FCFF_i}{(1+r_{e(u)})^i} + \frac{TV}{(1+r_{e(u)})^n} + PV(ITS) - E(\text{Distress Costs}) \quad (3)$$

The ITS goes back to Modigliani-Miller (1958), first accounting for the market imperfections of taxes and the respective impact on firm's capital structure. Myers contradicted 1974 in his introduction of the APV method the proposed use of the risk-free rate as discount factor for ITS, by stating the appropriate discount factor to be used is the cost of debt. Luehrman (1997) further supported the use of cost of debt by elaborating on the similarity in uncertainty of the principal and interest payments made on debt and the corresponding tax benefits from debt and, therewith the ITS itself. Opposing this concept, Harris & Pringle (1985) for instance, argue that

the unlevered cost of equity should serve as the discount rate since it infers an equal risk shared among the firm's cash flows and ITS. Despite the lack of definite consensus in literature, cost of debt has established as ITS discount rate among practitioners, following Myers and Luehrman.

$$\text{ITS} = \text{Average Debt} * r_d * t_c \quad (4)$$

$$\text{PV (ITS)} = \sum_{i=1}^n \frac{\text{ITS}_i}{(1+r_d)^i} + \frac{\text{TV}}{(1+r_d)^n} \quad (5)$$

As touched upon earlier, borrowing money is not only associated with benefits but also comes at costs. These costs occur in case of financial distress, when a firm violates covenants, breaks its promises to creditors or is even likely to fail its financial obligations (Brealey, Myers & Allen, 2011). To account for the likelihood and severance of implications of such an event, the expected financial distress/ bankruptcy cost are included in the APV method.

$$\text{E(Distress Cost)} = \text{EV(U)} * \text{Prob. of Default} * \text{Bankruptcy Cost} \quad (6)$$

While the probability of default is determined using a statistical approach for observable firm characteristics at different debt levels, great difficulty lies in accurately estimating the bankruptcy costs (Altman et al., 2004). These bankruptcy costs can be divided into direct (in general 3%-5% of firm value) and indirect costs (in general 25%-30% of firm value) (Gruber & Warner, 1977; Shapiro & Titman, 1985). More on the costs and related challenges in [Appendix 4](#).

### 3.2.3 Terminal Value

The TV, which will be added to the priorly computed value of the projection phase, contributes the largest portion to the firm's value (Schill & Loutskina, 2013). Therefore, its proper assessment is crucial. Damodaran (2012) provides three approaches for estimating the TV: exit multiples, liquidation, or perpetual growth method. The two former ones are explained in [Appendix 5](#).

The perpetual growth method in contrast, reflects a steady state level in terms of cash flow growth and reinvestment ad infinitum. This constant growth rate is approximated by and capped

at the company's long-term industry/ sector growth, the (nominal) GDP, or the inflation rate (Damodaran, 2012). This method also relies on the respective discount factor of the cash flows.

$$TV = \frac{FCF_{t+1}}{(r-g)} \quad (7)$$

### 3.3 WACC

For computing the present value of a firm's FCFF and TV, the WACC has established as discount factor. The cost of capital can be viewed as opportunity cost from the perspective of firm's debt and equity investors. These reflect the return respective capital providers demand for investments in companies with similar risks. Yet in contrast to debtholders, equity investors lack any fixed return entitlements. The requirements and thus the risks, as well as the tax ramifications for equity and debt capital and the respective associated costs, differ. The WACC therefore expresses the required return by all firm investors, respectively the equity and debtholder, on their corresponding invested capital, proportionally to their contribution to an enterprise's capital sources (Goedhart et al., 2010). Both capital sources and related costs are displayed at market- (MV) instead of book- values (BV) to increase estimation accuracy. More on the MV of Debt and Equity in [Appendix 6](#).

$$WACC (after\ tax) = \frac{D}{(E+D)} * r_d * (1 - t_c) + \frac{E}{(E+D)} * r_e (l) \quad (8)$$

Since the valuation output is highly dependent on WACC, its calculation is crucial. Entailed components are highlighted in the following in greater detail.

#### 3.3.1 Cost of Debt

The cost of debt is either proxied by a company's Yield to Maturity (YTM) for its outstanding (long-term) investment grade bonds or derived from the firm's (implicit) credit rating expressed through its yield spread over the risk-free rate (CFI, 2020). Noteworthy, the former approach is distorted when bonds entail attached option features, are convertible or illiquid (CFI, 2020). Nevertheless, the latter approach is preferable for private markets with the cost of debt not being directly observable and for companies with multiple tranches of debt with varying interest rates and different seniorities. To conduct it, a private company gets assigned an implicit credit rating based on its historic liquidity and leverage ratios, benchmarked against industry averages.

### 3.3.2 Cost of Equity

The equity costs are formally expressed in Eugene Fama's formula, known as the Capital Asset Pricing Model (CAPM) (Sharpe, 1964). The formula consists of two parts. First, the risk-free rate, reflecting the minimum return investors require for holding a risk-free security. Second, the risk premium of equity capital. It signifies the return compensation provided to equity holders for undertaking the idiosyncratic risk. This is set in relation to the underlying market, expressing the systemic risk. In turn, this second part of the formula, can be divided into two sub-factors. On the one hand, the market risk premium, displaying the expected return for holding a risky market portfolio in excess of the risk-free security. On the other hand, the beta. The beta defines the degree of company specific risk compared to the market one.

$$r_{e(lev)} = r_f + \beta_{(l)} * (E[r_m - r_f]) \quad (9)$$

The beta should be adjusted according to the target capital structure going forward to incorporate and contemplate the effect of financial leverage on the company's risk profile. In the case of the APV approach, the unlevered beta is used in the CAPM to calculate the unlevered cost of equity since the debt implications are treated separately.

### 3.3.3 Risk-Free Rate

The underlying assumption of an investment to be risk free is the absolute certainty about the future return, implying no reinvestment nor default risk and, subsequently the expected return being equal to the actual return. Therefore, in theory, the best approximation of the risk-free rate is reflected by the return of a long-term zero-coupon bond issued by a default-free government (Damodaran, 2012). Factoring-in the reality of existing default risk of states and therewith governments, the true risk-free rate is proxied as an alternative by the YTM of long-term bonds with no coupons from governments with the highest creditworthiness (credit rating), taking several macro-economic, fiscal, and (political) stability elements into account. To circumvent the inherent limitation this proxy and ultimately the CAPM impose with a unique risk-free rate solely portraying a snapshot of the current interest rate environment and thus implying a non-realistic flat yield curve, Svensson (1994) devised a non-linear optimization model (based on Nelsen and Siegel's work from 1987) to gauge the risk-free spot rate over time, capturing potential fluctuations and shifts in YTM.

$$r(T) = \beta_o + \frac{\beta_1 * \left(1 - e^{-\frac{T}{\tau}}\right)}{\frac{T}{\tau}} + \beta_2 * \left(\frac{1 - e^{-\frac{T}{\tau}}}{\frac{T}{\tau}} - e^{-\frac{T}{\tau}}\right) \quad (10)$$

### 3.3.4 Beta

The beta, expressing the systemic and non-diversifiable risk, is commonly estimated using two methods. First, for publicly listed companies, the ordinary least squared regression of stock returns from the company to value on the market returns is used (Pinto et al., 2014). Since this method utilizes historical data, lagging the prospective dimension of a valuation, the yielded raw beta is adjusted according to Blume's (1975) findings of betas reverting over time to one, moving it closer to the expected beta and thus increase estimation accuracy and robustness.

$$\beta_{(l)} = \frac{Cov(r_e, r_m)}{Var(r_m)} = \frac{\sum_{i=1}^n (r_{e,i} - \bar{r}_e) * (r_{m,i} - \bar{r}_m)}{\sum_{i=1}^n (r_{m,i} - \bar{r}_m)^2} \quad (11)$$

$$Adjusted\ Beta = \frac{2}{3} * Raw\ Beta + \frac{1}{3} \quad (12)$$

The second method is explained in [Appendix 7](#). To match the to-be-discounted cash flow, the beta must reflect the corresponding capital structure. Consequently, for the APV approach, the unlevered cost of equity and, therewith the unlevered beta for the CAPM comes to play.

Even though there are several ways of unlevering a levered beta (Miles & Ezzell, 1980; Harris & Pringle, 1985), Hamda's (1972) formula has established as one of the most common ones.

$$\beta_{(l)} = \beta_{(u)} * \left(1 + (1 - t_c) * \left(\frac{D}{E}\right)\right) \quad (13)$$

### **3.3.5 Market Risk Premium**

The market risk premium is the expected return of a market portfolio of risky assets in excess of the risk-free rate, thus representing the CAPM security market line slope (Chen, 2022). Zenner et al. (2008) elaborated on six different methods. The most common one, focusing on historically realized returns, is viewed as best practice for determining the market risk premium (Damodaran, 2012). This approach retrieves the historical average returns (in excess of the risk-free rate) for a certain stock index. The choice of a corresponding index is aimed at properly reflecting the underlying company's operational coverage in terms of industry and/or geography. Another data source for estimating the market risk premium is Damodaran's research.

### **3.5 Conclusion**

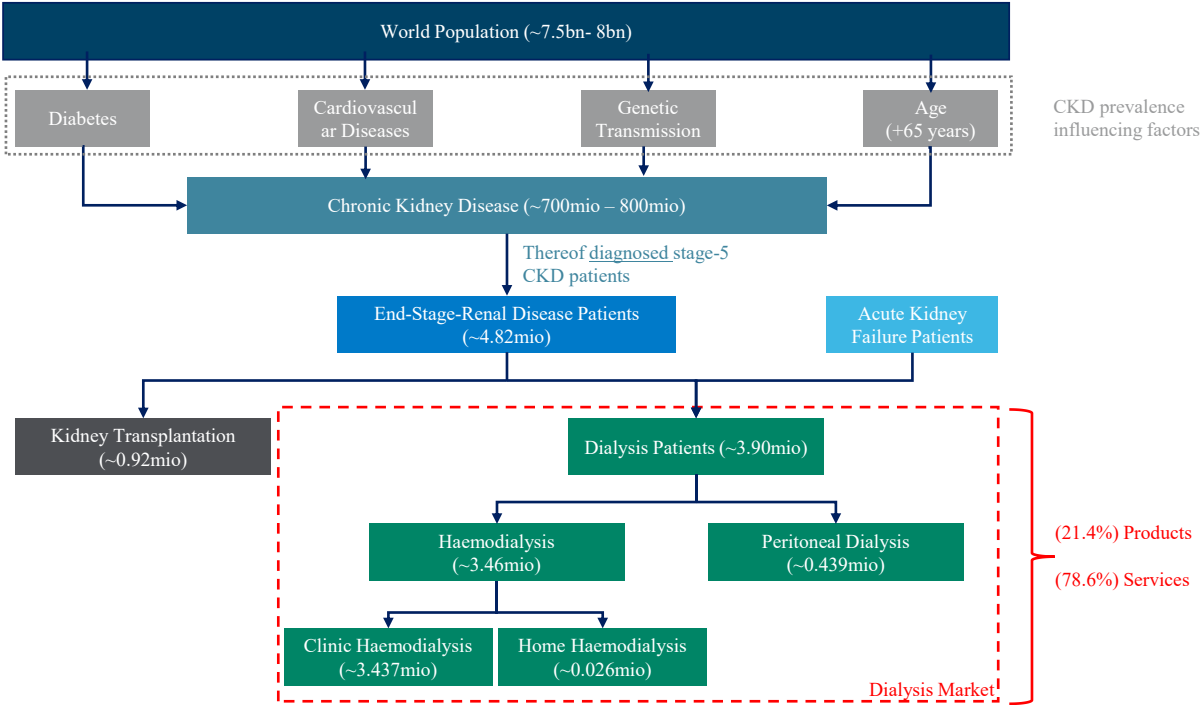
After introducing the main valuation techniques, the most appropriate ones are selected for FME. The healthcare industry is an integral part of countries' infrastructure and therefore a primarily stable and long-term oriented business as it underlies several structural drivers such as demographics, prevalence of diseases, healthcare accessibility, and availability. This is also applicable for the dialysis market. With FME developing and manufacturing dialysis products globally but also providing dialysis services in a "brick-and-mortar" fashion, the business has a strong asset base. For these reasons, the DCF method is regarded as the best option, enabling the comprehensive analysis of the company's revenue streams and cost structure, thereby elaborating on its intrinsic value and related drivers. The preferred types of DCF for FME are FCFF and APV because of the current macroeconomic environment and the company's transformation program, implying fluctuations in profit margins and potential capital structure changes, making the valuation less sensitive due to the direct computation of the EV.

For the market-based approach, the EV/EBITDA multiple is best-suited due to the global dimension of the dialysis market, minimizing the jurisdictional difference in taxes and accounting standards for D&A (e.g., IFRS vs. US GAAP).

### 4. Industry Overview

Dialysis, used for the continuous treatment of acute renal failure (ARF) and chronic kidney disease (CKD) in the 5<sup>th</sup> stage, also called end-stage renal disease (ESRD), has a global market value of USD 108.7bn in 2021. It is projected to grow at a CAGR of 6.78% until 2030 (Precedence Research, 2022). The market is segmented by treatment type. Haemodialysis (HD) is the predominant form of dialysis treatment, with a market share of 56%, and peritoneal dialysis (PD) follows with 44% (Precedence Research, 2022). A further sub-segmentation is based on offerings. Dialysis services account for 78.6% of total market value, and products for 21.4% (Precedent Research, 2022).

Figure 2 Structural Breakdown of Non-Communicable Diseases to Dialysis Market

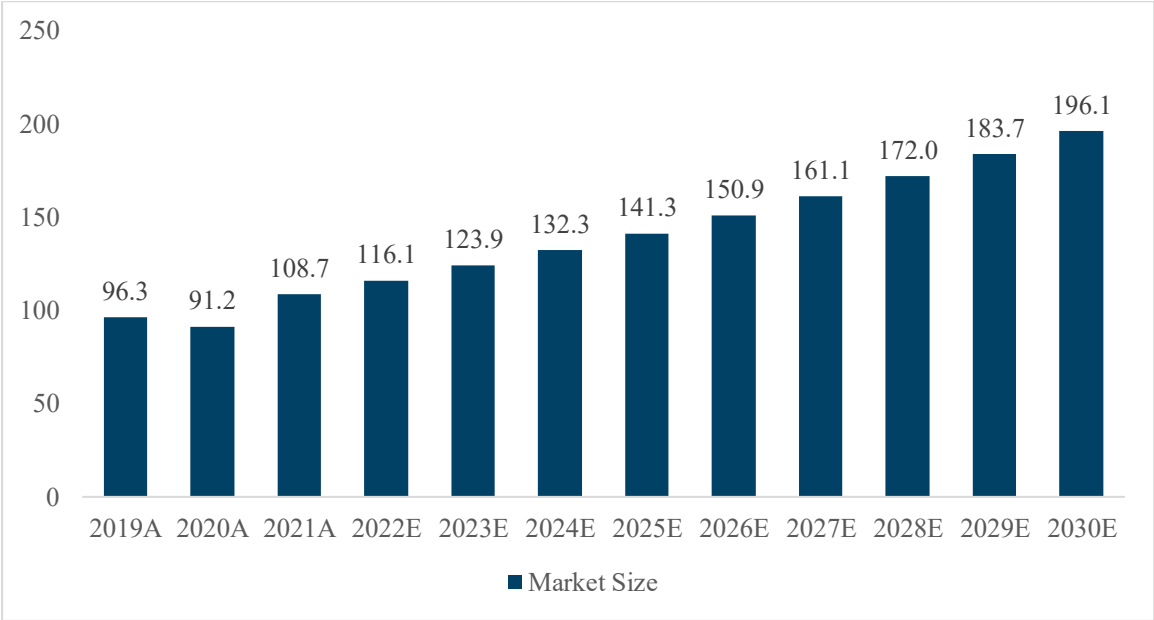


Sources: National Kidney Foundation, FME Annual Report 2022, Own Illustration

The dialysis services (sub-) market is characterized by local presence, driven by the constant provision of treatment services in (outpatient dialysis) clinics, which is thus linked to the clinics’ respective catchment areas. In addition, home dialysis care is an integral part of the business, also requiring access to dialysis professionals for supervision and training purposes. Patients receiving treatment in dialysis clinics account for 88%, and home dialysis patients for the remaining 12% (FME Annual Report, 2022). The number of specialized clinics in 2022 is 49,000 globally, with on average 80 patients treated per clinic (FME Annual Report, 2022).

Contrary to services, the market for dialysis products (machines, solution bags, consumables, etc.) is primarily operated on a national to global level.

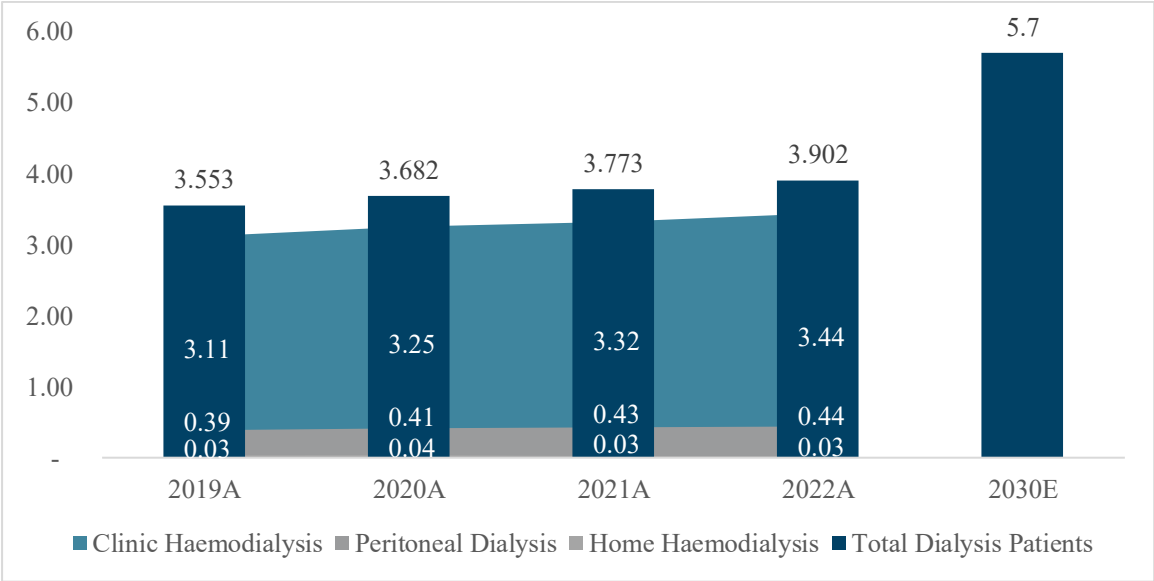
Figure 3 Market Size by Year (USDbn)



Sources: Statista 2022, Allied Market Research, Precedent Research 2022

In 2022, the number of ESRD-affected patients receiving treatment using products and services intended for dialysis amounts to 3.9m worldwide (FME Annual Report, 2022). It is estimated that the number of dialysis patients will rise to >5.7m by 2030 (FME Investor Presentation, 2023).

Figure 4 Historical Dialysis Patient by Treatment Type and Total Projected Dialysis Patients (m)



Sources: FME Annual Report 2019- 2022, FME Investor Presentation 2023

In the US 570,000 people suffering from kidney failure are treated with dialysis (American Kidney Fund). According to the latest data, an excess of 150,000 Americans has been newly diagnosed with kidney failure, of which 97% rely on dialysis, while only 4,022 were able to receive kidney transplantation due to the lack of available kidney donors (American Kidney Fund). Comprehensive public healthcare expenditure through Medicare alone, the federal health insurance program covering all ESRD-affected patients, of USD ~36bn for outpatient dialysis treatment and kidney transplantations makes it one of the most attractive countries for dialysis product and services providers (Medicare.gov; LeClair, 2020). However, APAC, in particular, China, is also projected to gain importance for the dialysis market due to the evolving establishment of private dialysis clinics (Dandan & Xinyi, 2022).

In addition to structural factors as access to and healthcare reimbursement, value drivers for the dialysis market are treatment-specific product and service advances, which will be discussed in more detail in the following paragraphs. Structural market determinants are elaborated on in [Appendix 8](#).

## 4.1 Haemodialysis Market

Dialysis is a blood clarification method, replacing the kidney functions of removing waste products from the blood, regulating the water and acid balance, and producing essential hormones such as erythropoietin and renin. HD is an extracorporeal technique in which blood from a vessel is retrieved, passed through a synthetic filter (dialyzer), cleaned, and returned to the patient. The process is conducted, controlled, and regulated with a dialysis machine, adding anticoagulant. It is usually performed three times a week and can be done in a specialized dialysis clinic or at home.

Approximately 99.2% of HD was conducted in specialized clinics and 0.8% in a home-based setting in 2022 (FME Annual Report, 2022). In total, 3.5mio patients with ESRD received HD treatment (2022) (FME Annual Report, 2022). Time savings per treatment and the ease of application of HD compared to other dialysis remain beneficial for patients and providers, ensuring the predominant use over the projection period. Since HD treatment in clinics is highly dependent on the sheer number of available facilities and the personnel and related to higher fixed costs, a shift towards educating patients about home dialysis is observable.

Figure 5 HD Market Drivers and Potential Risks Associated

- **Technological product advancements** such as telehealth (e.g., *DaVita Care Connect*, *Nx2me Connected Health* by FME for *In-App-Videoconference treatments*, or *NxSTEPS HHD* also by FME for the education of patients at home on how to apply and conduct HDs)
  - ✓ Expected to **increase productivity per employee** (treatable patients per dialysis professional).
  - ✓ **Deeper market penetration:** Access to patients in more rural and less dense regions, not yet captured.
  - ✓ **Reduce provider fixed expenses** and allocate capital towards the development of (emerging) countries.
  - ✓ **The purchase or rent of dialysis machines** by end-users causing the **strengthening of product sales**.
  - ✓ **Patients' preference for home HD:** Avoidance of travels to clinics, feel more comfortable during the dialysis at home
- **Lack of quality control** might negatively impact the patients' health if HD is not performed as professionally as in dialysis clinics.
- **Approval of new products** in respective countries due to **national health regulations** and **general data protection**.
  - Application widespread of disruptive technologies **slow down**
  - **Delayed** realization of the growth opportunities
- **Acceptance** of customers to adapt such technologies, as health procedures and the health data generated are a sensitive issue.
- Consolidation of dialysis clinics: Create synergies, expand local footprints as point of contacts for the increasing basis of patients.
  - ✓ Complementary to regional footprints are in this case also international rollout.

Sources: FME Annual Report 2022, DaVita Inc. 2022, Own Representation

## 4.2 Peritoneal Dialysis Market

PD is a method in which the patient's peritoneum serves as a natural filter organ. It can be done through a continuous ambulatory peritoneal dialysis (CAPD) or automated peritoneal dialysis (APD). The dialysis solution needs to be changed four to five times a day for the former. For the latter, a cyclor (programmable device) is employed to control the filling volume, inflow, dwell time and outflow, enabling treatments at home even when the patient sleeps.

Figure 6 PD Market Drivers and Potential Risks Associated

- **Technological progress** for PD treatments is also expected to act as an amplifier for future growth.
  - ✓ For example, Kinexus by FME: 24/7 online access to patient data for remote programming of individual treatments as well as a supervision function for dialysis provider.
- Increasing importance of **big data**: collection of big data with Telehealth and IoT solutions.
  - ✓ Implementation of **advanced analytics tools** by service and (if applicable) product provider.
  - ✓ Data as information base for R&D efforts, product innovation, and enhances treatment outcomes (**adjustment of dosages and integrating treatment results into risk- and value-based care programs**).
  - ✓ **Diagnostics improvement**: More precise and early detection, increasing the number of patients aware of disease (treatable patients) and thus the addressable market
- **Product innovation**: PD automation, Patient Apps (e.g. FME's Continuous Ambulatory Peritoneal Dialysis) for patients self-tracking of therapy and vital information also enabling patients to directly order required consumables
- **Inadequate training** with existing and new products: Serious consequences for patients
  - Risk of lawsuits and additional supervision by governmental authorities
- **Regulatory approval** (e.g., by the FDA) delays adoption of technologically advanced solutions
- **Data protection concerns**
  - Legal issues related to data lacks
- **Increased self-reliance on patients**:
  - Reimbursement can be slowed down, requiring patients to pay out-of-pocket in advance

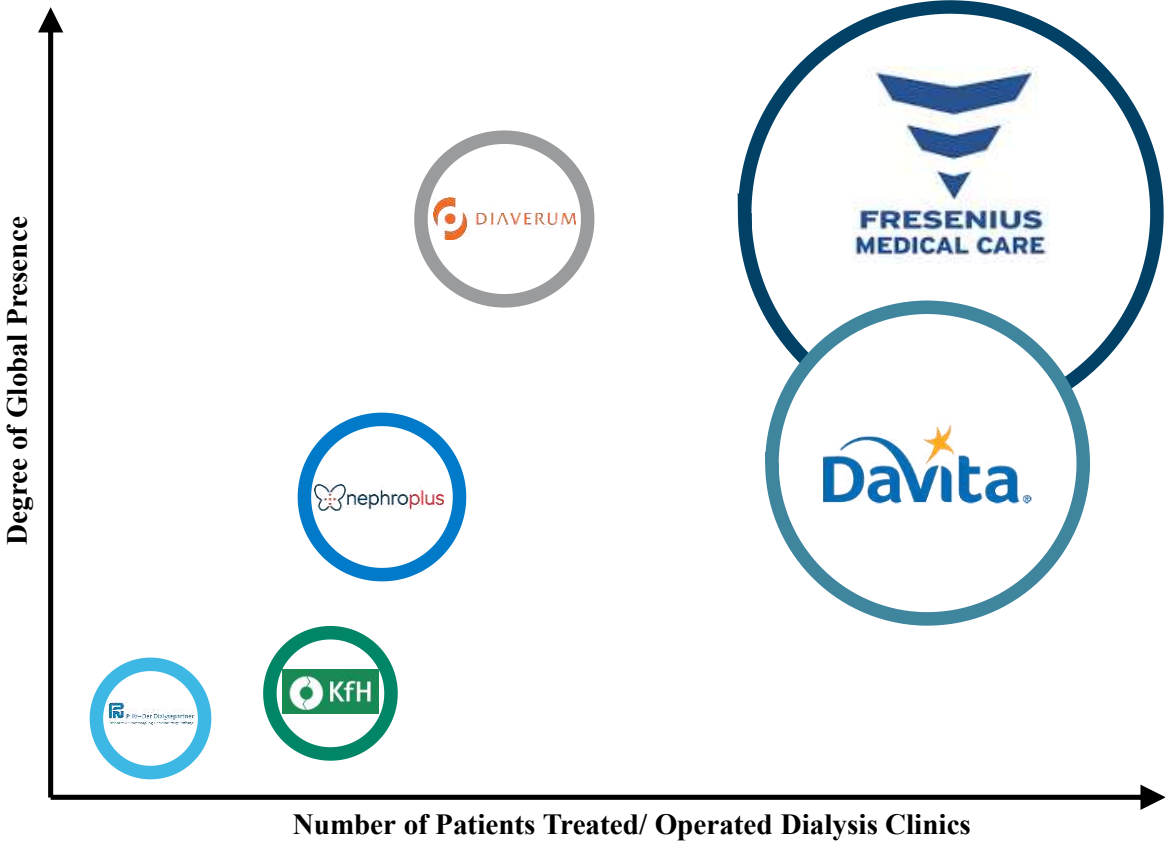
Sources: FME Annual Report 2022, Own Representation

## 4.3 Competitive Landscape

The North American dialysis services market, especially in the US, is highly consolidated with duopolistic tendencies. The largest providers are FME and DaVita, which serve ca.30% of total patients in the US each (FME Annual Report, 2022; DaVita Inc., 2022). According to Bloomberg, these two players even cover up to 70% of the US market (The Editors, 2022). In contrast to the privately organized US market, the European dialysis service market is less commercialized. Next to dialysis performed by local nephrologists and non-profit organisations

(e.g., Kuratorium für Dialyse with ~18,000 patients, Patienten-Heimversorgung with ~7,000 patients), players such as FME or the Swedish dialysis provider Diaverum with 440 clinics in 23 countries, ~39,000 patients, and a strong European footprint, hold a significant market share in the European market (KfH, 2023; Patienten-Heimversorgung; Diaverum). The Asian dialysis services market is shaped by a high fragmentation with small- to medium-sized providers and in-hospital dialysis. Its largest providers include FME, with ~34,000 patients, and the Indian company nephroplus, with 310 clinics (FME Annual Report 2022; nephroplus). Diaverum, for instance has also entered the Asian market by acquiring Advanced Renal Care Asia (White & Case, 2020). Latin America is further coined by FME’s footprint of ~37,000 patients (FME Annual Report, 2022).

Figure 7 Indicative Competitive Landscape of major Dialysis Service Providers



Source: Own Illustration

On the dialysis product and equipment market, major international players such as FME, Baxter International, Becton Dickson, Medtronic, B. Braun, Asahi Kasei, and Nipro hold a dominant position, achieving economies of scale and driving potential market growth through intensive research and development (R&D).

FME is not only amongst the largest dialysis services providers but also product manufacturers, making it the vertically integrated market leader.

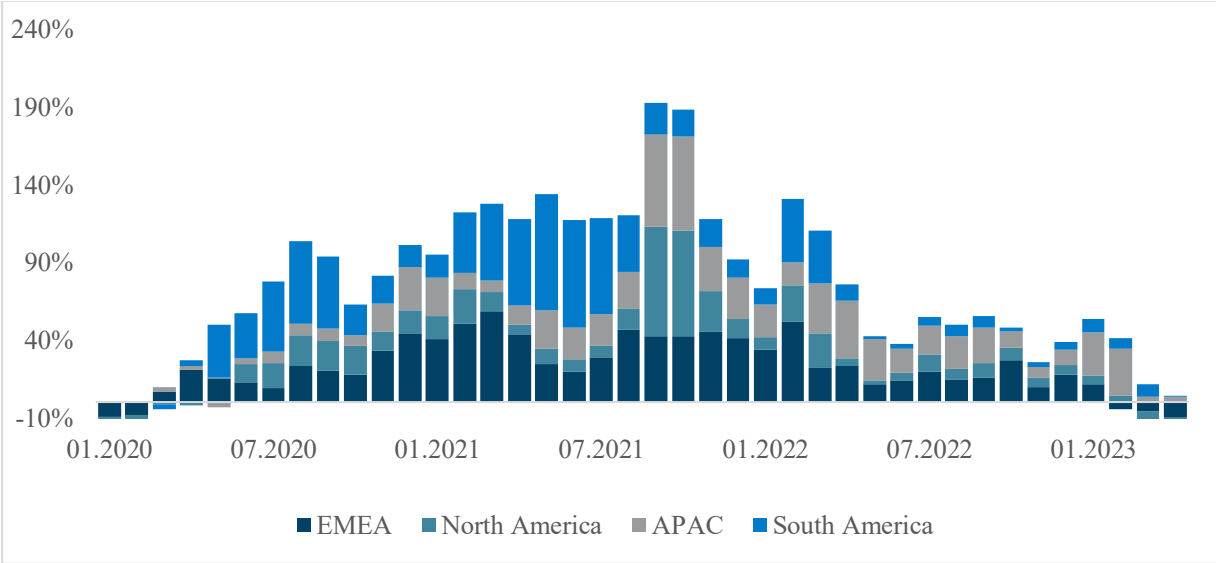
**4.4 Macroeconomic Environment**

The dialysis market is highly intertwined with the macroeconomic environment as it is an integral part of countries’ healthcare infrastructure and therefore underlies governmental regulations as well as certain evolving market influencing factors, namely Covid-19, the labour market, and inflation which will be highlighted in the following sub-chapters. An excursus to the monetization and regulatory environment as well as the interest rate development is provided in [Appendix 9](#) and [10](#), respectively.

**4.4.1 Covid-19**

The Sars-CoV-2 virus spread worldwide and was declared a global pandemic on March 11th, 2020. The virus affected people of higher age (65+ years) and pre-existing health conditions in particular, the patient group also vulnerable to renal diseases (Henderson, Davies, & Vanholder, 2021; WHO, 2019). Excess mortality during the pandemic caused a decline in number of dialysis patients in the US, the first in 50 years (National Kidney Foundation, 2022).

*Figure 8 Monthly Average Excess Mortality by Region (2020– 2023)*



Source: Mathieu et al. 2023

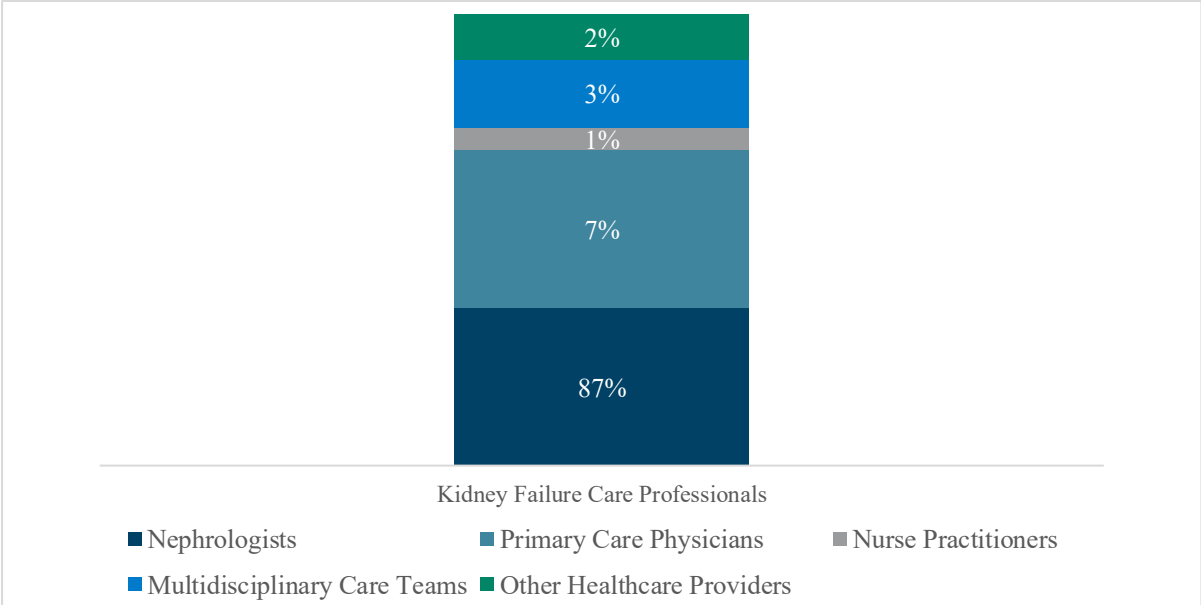
Additionally, the already scarce healthcare workforce faced infection-, stress-related and vaccination-binding staff shortages (Gupta et al., 2021). Consequently, the dialysis market experienced disrupted operations, reduced patient growth, and margin pressure.

To mitigate Covid-19 implications on the (healthcare) industry, the US launched a USD ~2tn support program (CARES) (US Department of the Treasury, 2020). Additional information on the Covid-19 effect in [Appendix 11](#).

**4.4.2 Labour Market**

To maintain, incentivize, and attract future healthcare workers, companies face higher personnel costs through wage increases and bonus remunerations. According to the International Society of Nephrology, the “shortage of nephrologists and other healthcare providers essential for kidney disease care” is prevalent, especially in lower-income countries (Riaz et al., 2021). “The nephrology workforce is predicted to further decrease in size and capacity over the next decade, which will further exacerbate current demand for kidney disease care” (Riaz et al., 2021). The type of professionals required for kidney failure treatment is demonstrated below.

*Figure 9 Clinical Responsibility for Kidney Failure Treatment by Profession Type (% of Surveyed Countries)*



*Source: International Society of Nephrology 2023*

The median global nephrologist prevalence is 11.8 per million population (pmp) with 1.2 pmp for respective trainees (International Society of Nephrology, 2023). Leading regions in this regard are North and East Asia (28.7 pmp), Western Europe (25.0 pmp), and Eastern and Central Europe (24.8 pmp) (International Society of Nephrology, 2023). North America (& Caribbean)

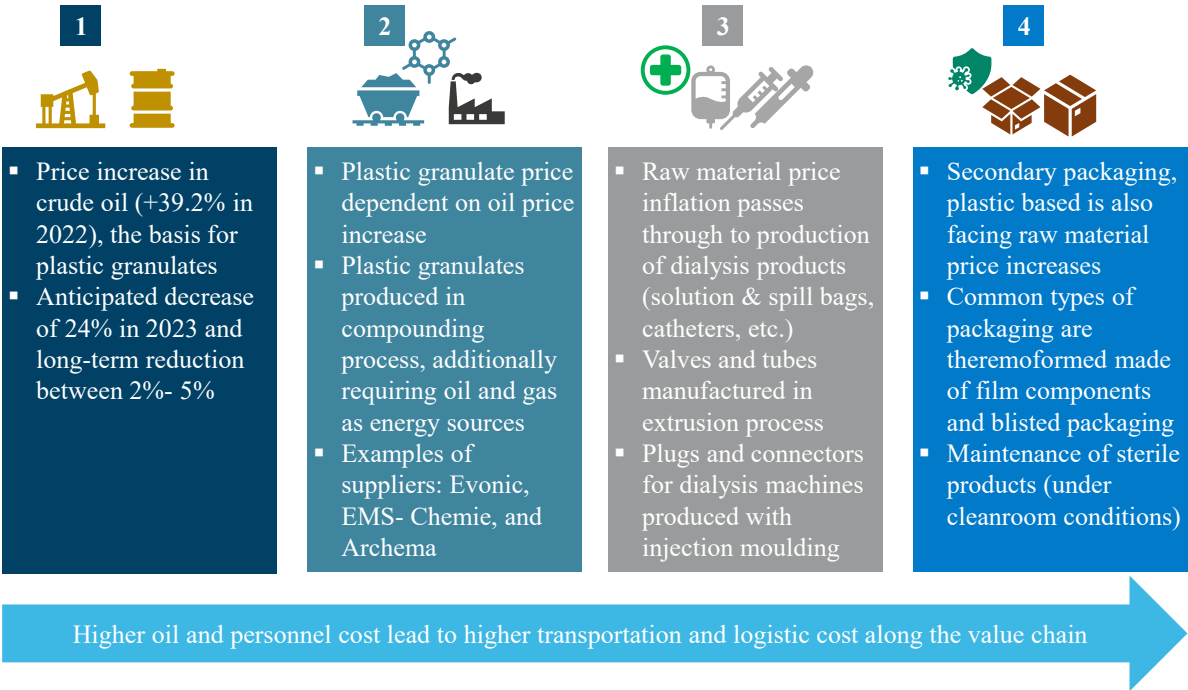
solely has 19.68 pmp (International Society of Nephrology, 2023). The comparison by region underpins the shortage of dialysis executing personnel, especially in North America.

**4.4.3 Inflation**

Loose monetary policy and the impact of the Ukrainian war led to an increase in inflation, the highest in nearly 40 years. The inflation of raw materials and energy prices coin particularly the dialysis product market (Isidore, 2022).

In the case of dialysis products made from plastics, inflation extends across various steps of the value chain.

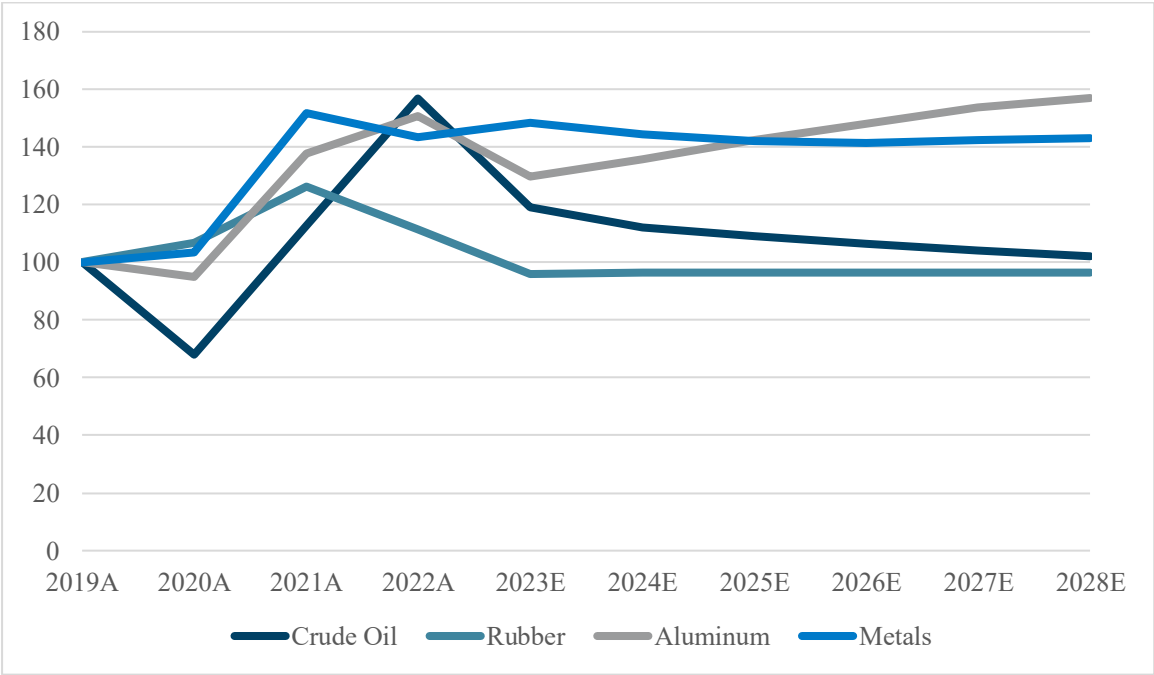
Figure 10 Indicative Value Chain for Plastic Dialysis Products



Sources: IMF 2023, VP Group, Groninger & Co., Plastica

Moreover, prices for metals and aluminium utilized in dialysis machines have increased over the recent period. Aluminium prices rose from 2020 to 2021 by 45.1% and in 2022 by 9.5% (IMF, 2023). However, the IMF anticipates a decrease in 2023 of 14.1%, with relatively constant price increases projected in the foreseeable future (2%- 5% p.a.) (IMF; 2023). Despite their current level (+46.7% 2021 y-o-y), metal prices are expected to decrease by 1%- 3% p.a. and stabilize over the medium-term (IMF, 2023).

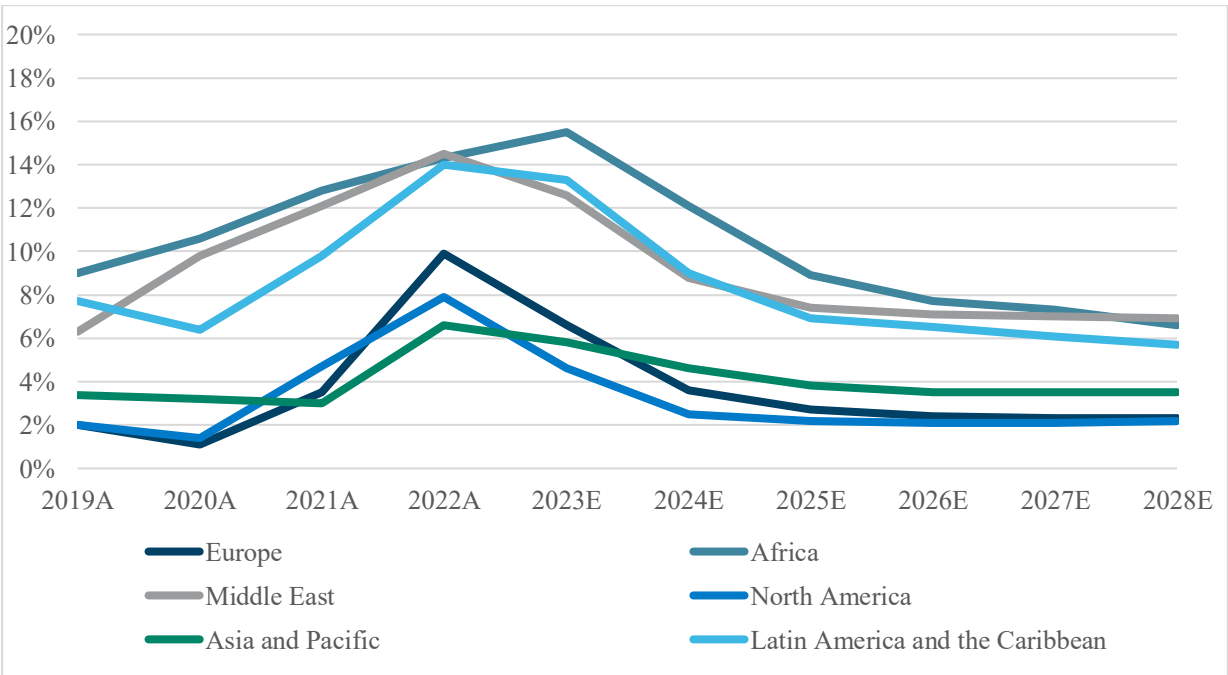
Figure 11 Raw Material Price Changes (indexed on 2019)



Source: IMF 2023

In addition, the overall consumer price index has increased on average by ~11% for core geographic markets in 2022 (IMF, 2023). The wage-price spiral, especially in the dialysis services segment, raises concerns for companies’ OpEx in conjunction with the existing excess demand for qualified healthcare professionals.

Figure 12 Inflation as % Change in Average Consumer Prices



*Source: IMF 2023*

A potential negative margin impact in the dialysis services business could result from a higher price sensitivity of public and private health insurers and other cost bearers. The sensitivity is likely to be driven by the recurring nature of dialysis treatments. With patients having approximately three treatments per week, marginal price increases can cause a migration to lower cost providers, conducting the dialysis at home instead of the professionalized clinic setting or patients deciding to undergo a (compared to dialysis) somewhat risky kidney transplantation.

## **5. Company Overview**

The following paragraphs are aimed at providing a commercial snapshot of FME, ranging from a detailed overview to in-depth information by elaborating on several characteristics.

Disclaimer: If not referred to otherwise, the information in this chapter is retrieved from the annual report and company website.

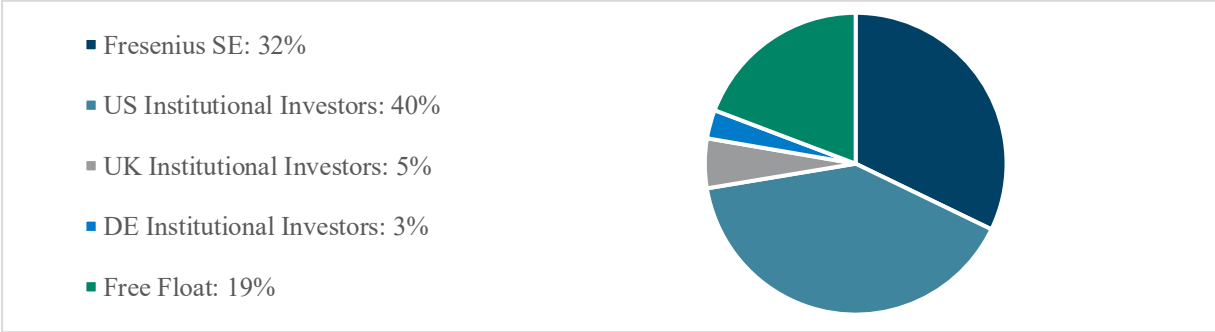
### **5.1 Company History and Ownership Structure**

Fresenius Medical Care AG & Co. KGaA, headquartered in Bad Homburg v.d. Höhe (DE), is a vertically integrated leading global healthcare company specialized in dialysis products and services for the treatment of patients with kidney diseases and is currently headed by Helen Giza as CEO.

At the core of the company lies a pivotal merger that brought together the dialysis division of Fresenius SE & Co. KGaA (Fresenius SE), tracing its roots back to the inception of the family-run pharmaceutical enterprise in 1462, and the US-based dialysis services provider National Medical Care. The newly created firm IPOed in 1996 on the stock exchanges in Frankfurt (Ticker: FMEG.DE) and New York (Ticker: FMS.N), with ordinary shares on the former and American Depositary Receipts (ADRs) in a ratio of 2:1 (ADR to stock) on the latter one. FME is part of the DAX index, which entails Germany's 40 largest companies according to market capitalization.

Since its establishment, Fresenius SE has maintained its position as the parent company and holds the largest ownership interest, amounting to 32% (2022). Ultimately, the Fresenius family holds 27% of the parent company Fresenius SE through the Else Kröner-Fresenius-Foundation. Additionally, FME’s KGaA (Kommaditgesellschaft auf Aktienbasis) legal structure allows the parent company to maintain and exercise a de facto control right via the general partner company Fresenius Medical Care Management AG in which it has a 100% stake. Next to the bespoke shareholder, ~40% of the remaining shares are held by institutional investors from the US and ~5% by institutional investors from the UK. In total, 592 institutional investors are identified, of which 14 own a minimum of 1% in FME.

Figure 13 FME Shareholder Structure (31<sup>st</sup> of December 2022)



Source: FME Annual Report 2022

**5.2 Product and Service Offerings**

FME provides a complementary suite of medical products and services that cater the need of patients suffering from a wide spectrum of renal diseases, ranging from chronic kidney failure to terminal renal failure. Products account for ~20%, and services for ~80% of the firm’s business (2022). The company’s capabilities comprise developing, manufacturing, and distributing a broad portfolio of medical products. In dialysis, FME’s products can be clustered according to types of treatment. The HD product range includes dialysis machines, dialyzers, bloodline systems, HD solutions and concentrates, granulates, water treatment systems, and data processing and analysis systems designed for the application in respective dialysis clinics and home-based settings. For PD, FME offers dialysis solutions for CAPD treatment, cyclers, and dialysis solutions for APD. Furthermore, the company has developed and sold several products for acute dialysis cases. Moreover, FME provides drugs used for treating chronic kidney failure as part of its product portfolio. Besides the company’s specialization in dialysis

products, it is also involved in products for treating acute cardiopulmonary failure and apheresis therapy in which excess blood fats and disease-driving antibodies are removed.

FME's product lines are complemented by a broad suite of services, ensuring patients receive optimal care throughout the treatment journey. Therefore, the company operates 4,116 own outpatient dialysis clinics globally, offering dialysis treatments, related laboratory services, and medical care and training of home dialysis patients. At the clinics, patients receive dialysis treatment three times per week by trained medical professionals under their supervision. A prerequisite for operating such a dialysis clinic is the regulatory approval of private companies conducting medical services and corresponding remuneration in the according country/ jurisdiction.

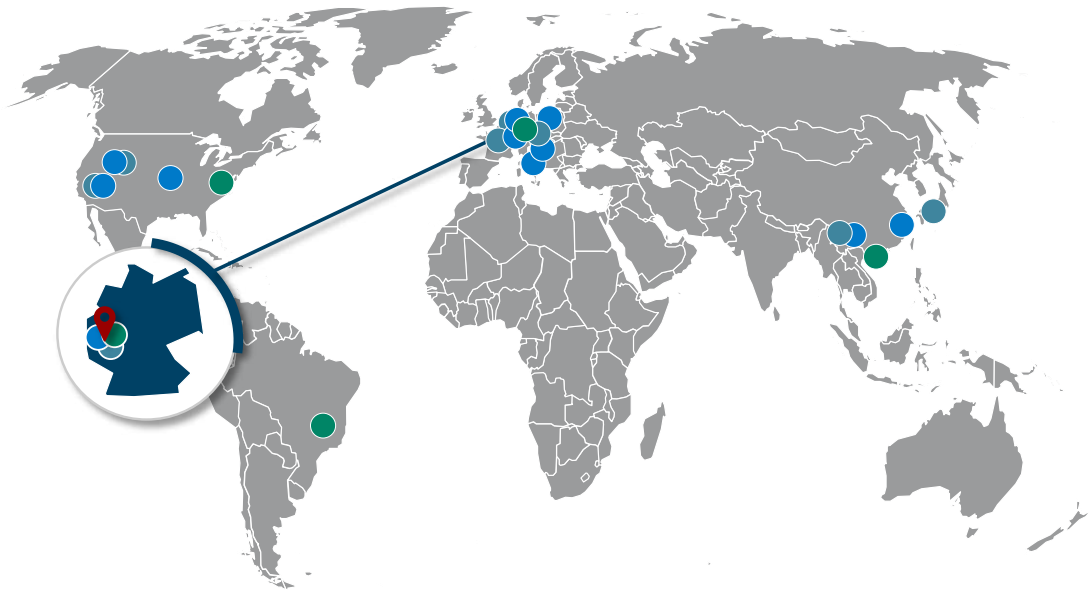
In addition to its core range of medical products and services, FME also provides a range of value- and risk-based care programs, leveraging data analytics and clinical expertise to develop customized care plans, improving, on the one hand, the treatment results and reduce healthcare costs on the other hand.

### **5.3 Go-to-Market Strategy and Business Organisation**

FME operates with its ~128,000 employees globally to provide healthcare for chronic and critically ill patients through holistic renal therapy, intensive care solutions, and the acquisition and development of supporting business activities. To properly address the patient's needs, the regulatory environment, and the underlying market dynamics, FME operates on a regional level via a decentralized business model structured according to its core geographic markets: North America, EMEA, APAC, and Latin America. Following this go-to-market approach, key offices to serve each of the geographic markets are located in Waltham (US), Bad Homburg (DE), Hongkong (CN), and Rio de Janeiro (BR). North America is due to its healthcare system with many private cost bearers, subsidized aid programs, and the firm's historically driven strong footprint, the company's most important market.

From an organisational standpoint, the company's value chain, which commences with R&D and procurement and culminates in providing products and services offerings, is centred around the go-to-market strategy.

Figure 14 Geographic Overview of FME's major R&D and Production Locations and Key Offices



📍 Global Headquarter ● Key Offices ● Major Production Plants ● Main R&D Facilities

R&D Highlights		Production Highlights	
IP Rights	10,086	# of Production Plants	42
Patent Groups	~1,599	# of Countries produced in	20
Newly Created Patent Groups (2022)	53	Share of Plants with implemented Lean Six Sigma Approach	~30%
# of R&D Employees	1,235	# of Production (Logistic) Employees	16,916

Sources: FME Annual Report 2022, Own Illustration

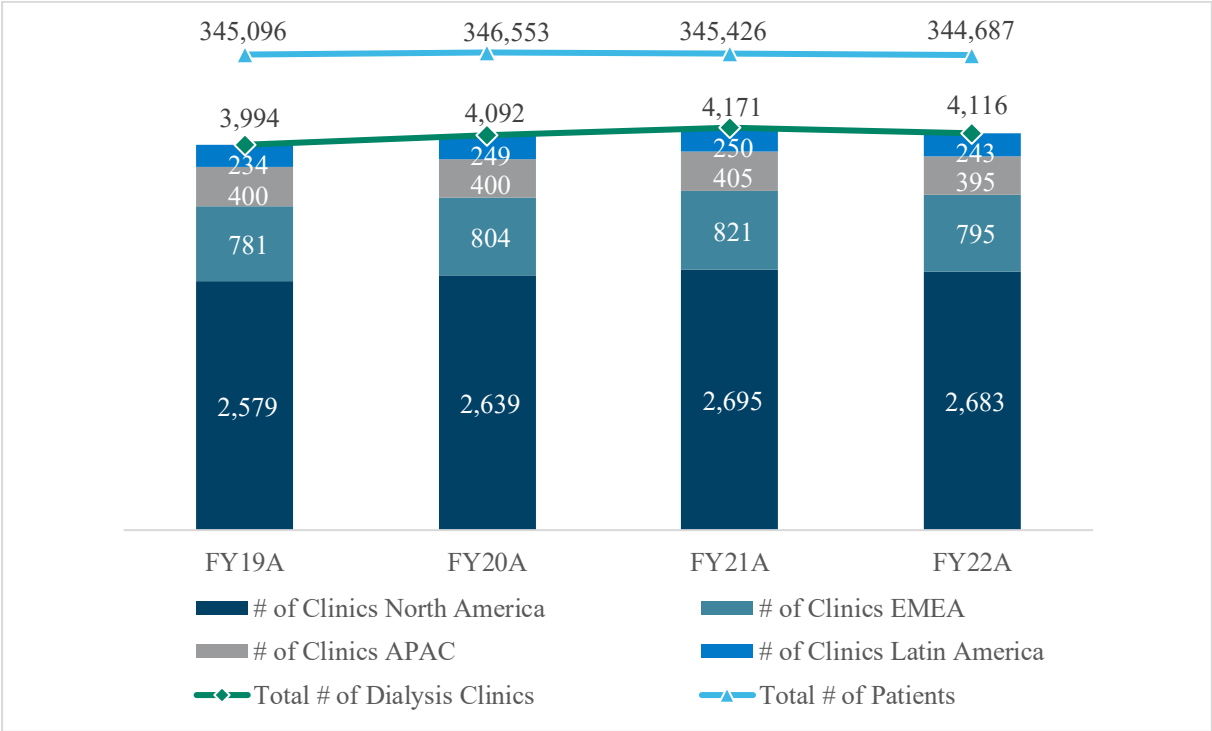
The production plants are set up to supply correspondingly produced products (except for the ones in Latin America that only produce dialysis concentrates and solutions and need to get the machines etc., from a different location) to the regions in which they are located.

The developed and manufactured (dialysis) products are sold through own sales offices in main markets to third parties (healthcare facilities and wholesalers with contracts ensuring the after-sale of consumables) but also, and most importantly, utilized in the company’s network of dialysis clinics in the respective regions, thereby underlining the vertical integration and recurring business nature.

This enables a constant feedback loop from treated patients and employed medical staff, creating relevant data for product innovation (e.g., Kinexus) and optimization (2,400 product improvements in 2022). Furthermore, the double-track strategy has led to the application of FME’s products in 150 countries worldwide.

In context, in 2022 FME served 344,687 patients in its 4,116 own outpatient dialysis clinics and at home. This resulted in approximately 52 million treatments. 60% of the patients are located in North America and 19% in EMEA, 11% in Latin America, and 10% in the APAC region. Thereby is the services segment the largest source of income for the company.

Figure 15 Dialysis Clinics by Geography and Annual Number of Patients



Source: FME Annual Report 2020- 2022

## 5.4 Key Strategic Initiatives

FME's key strategic initiatives have two forms: Company strategy and goals and the Transformation Program FME25. The former deals with capturing overall long-term merit resulting from product and services trends to enhance the customer/ patient value-add and the incorporation of sustainability goals. A detailed explanation is to be found in [Appendix 12](#). The latter is a company-specific one-time program to remodel FME's organisational structure to enable profitability-driven growth by 2025.

### 5.4.1 Transformation Program

The transformation program FME25 launched in 2020, aims to transform the company's operating model and implement a coherent and sustainable growth strategy by 2025. Main objectives are the operating model's globalization, capital allocation optimization, and improved profitability (ROIC focus).

Business operations are structured under the new model into two global business segments: Care Enablement and Care Delivery. Respective changes from the decentralized and regional to the global model have been implemented as of 1<sup>st</sup> of January 2023, marking the start of the prospective reworked reporting. Under Care Enablement, the company's global healthcare products value chain is centralized, ranging from R&D over manufacturing to quality control and regulation. In organisational terms, this structure is expected to increase agility and reduce operational complexity to properly tackle issues such as increasing raw material and energy prices. Concrete counterfeit measures are pricing initiatives to buffer inflation, expand productivity measures, tightened R&D expenditure, and evaluate potential divestments of non-core business lines. The Care Delivery segment combines global healthcare services to address new patient groups strategically, review existing service markets, and improve the cost structure. This reorganisation is a countermeasure initiated to fight the headwinds from Covid-19 and the related accumulated excess mortality of patients with corresponding underutilization in the dialysis clinics at that time, the scarcity of (trained) healthcare professionals (even limiting the admission of new patients in clinics and thereby top-line growth), and inflation. Additionally, the new global segments should increase transparency in end-to-end reporting for identifying performance weaknesses (improvement possibilities) and exit non-lucrative international markets.

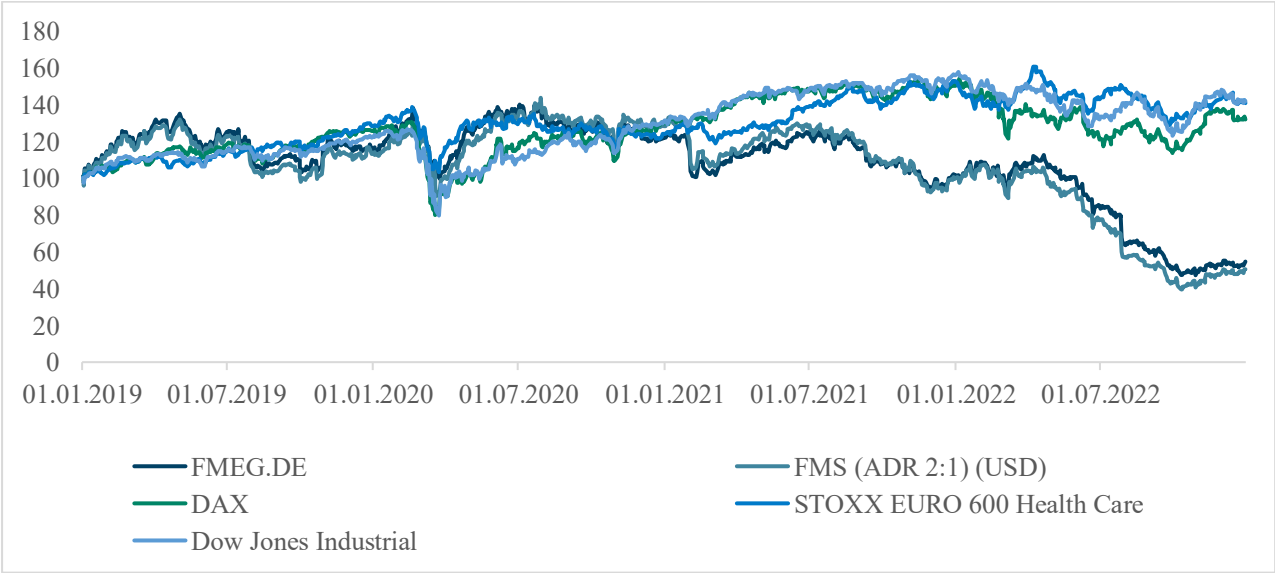
In terms of capital allocation, FME has realized savings of EUR 131m in 2022, therewith even accelerating the guidance of EUR 40-70m and increasing the target savings until 2025 to EUR 650m. One-time costs/ investments amounted to EUR 204m and raised expected investments also by 2025 to EUR 650m.

**5.5 Stock Price Development**

The company has experienced various macroeconomic headwinds in recent years, among others, the Covid-19 impact, operational challenges related to the Russia-Ukraine war, healthcare staff scarcity, inflation, and uncertainty about future effects resulting from the Supreme Court decision in 2022 (see [Appendix 9](#)), negatively affecting the company’s profitability and business environment. A detailed explanation is provided in [Appendix 13](#).

These factors are crucial for FME’s LTM stock price development and long-term prospect. FME shares had their 2022 year-high at EUR 63.56 in April and year-low at EUR 26.26 in October, from which the stock slightly rebounded towards the end of the year. Noteworthy, the trading volume of ADRs accounted for 50% of FME’s total trading volume in 2022, representing a 50% increase compared to prior year. This implies rising interest among US investors.

*Figure 16 Stock Price Development compared to major Benchmarks (indexed on 1st of January 2019)*



Source: Refintiv Eikon

## 6. Historical Financials

The following paragraphs are designed to elaborate on FME's historical financial performance and to draw inferences on underlying drivers and implications. The main methods applied to properly grasp the financials are common size-, trend-, and ratio analyses.

### 6.1 Common Size Analysis

The table below represents each line item as a percentage of revenue and shows that FME, reporting under IFRS, generates ~80% of its revenues through healthcare services and ~20% with healthcare products. FME's top-line grew at a CAGR of 3.5% (FY19A-FY22A), with a CAGR of 3.6% in the services segment and 3.4% in the products segment.

The company's largest geographic market is North America, with ~70% of revenues generated there, followed by EMEA (~15%), APAC (~11%), Latin America (~4%), and Inter-Company revenues of <1%. The gross profit margin declined over the last four years by 3.5pp due to marginal increases in cost of sales, especially for the services segment. Noteworthy, SG&A increased from FY21A to FY22A by 1.9pp due to restructuring efforts, in line with FME25, and rising personnel cost. Both developments, in conjunction with a decrease in income from associated companies, have led to an EBITDA margin dip from 21.9% in FY19A to 15.9% in FY22A. The effective tax rate of 27% (+5pp FY19A-FY22A) causes bottom-line profitability to drop to 4.6%.

Table 1 Common Size Analysis (Line Items as % of Revenue)

EUR (m)	Historicals			
	2019A	2020A	2021A	2022A
Total Revenue	17,476.6	17,859.1	17,618.7	19,398.0
ofw Healthcare Services	79.4%	79.0%	78.8%	79.5%
North America	63.4%	63.3%	62.1%	63.6%
EMEA	7.9%	7.8%	8.0%	7.6%
APAC	5.2%	5.1%	5.6%	5.3%
Latin America	2.9%	2.7%	2.8%	2.9%
Corporate (incl inter-segment consolidation adjustments)	0.0%	0.1%	0.2%	0.1%
ofw Healthcare Products	20.6%	21.0%	21.2%	20.5%
North America	6.4%	6.6%	6.5%	6.3%
EMEA	7.5%	7.7%	7.7%	7.1%
APAC	5.4%	5.5%	5.8%	5.8%
Latin America	1.2%	1.1%	1.1%	1.2%
Corporate (incl inter-segment consolidation adjustments)	0.1%	0.1%	0.1%	0.1%
Cost of Sales	69.1%	69.0%	71.2%	72.6%
ofw Cost of Raw Materials	21.3%	20.5%	20.6%	20.3%
ofw Cost of Purchased Services	1.3%	1.3%	1.4%	1.4%
ofw Personnel Cost	33.7%	34.0%	33.8%	35.2%
ofw Other Cost of Sale	12.8%	13.2%	15.5%	15.7%
Gross Profit Margin	30.9%	31.0%	28.8%	27.4%
Total OpEx	18.3%	18.6%	18.8%	20.7%
SG&A	17.3%	17.5%	17.6%	19.5%
R&D	1.0%	1.1%	1.3%	1.2%
Income from Associates	0.4%	0.5%	0.5%	0.3%
EBITDA Margin	21.7%	22.4%	19.2%	16.2%
D&A	9.1%	10.0%	9.2%	9.5%
EBIT Margin	12.6%	12.4%	10.0%	6.7%
One- Off (Remeasurement Gain from InterWell Health Acquisition)	0.0%	0.0%	0.0%	0.8%
Cost of Net Debt	2.5%	2.1%	1.6%	1.5%
EBT Margin	10.5%	10.8%	8.9%	6.3%
Taxes	2.3%	2.8%	2.0%	1.7%
Net Income Margin	8.2%	8.0%	6.9%	4.6%

Sources: FME Annual Report 2022, Own Illustration

## 6.2 Trend Analysis

The trend analysis indexed on FY19A for major P&L items crystallizes the aforementioned effects. Overall cost of sales rose by 17.3% by FY22A. Healthcare products contribute 16% of cost of sales to the total cost of sales and have risen over-proportionally by 40%. Healthcare services, responsible for 84% of cost of sales have experienced an increase of 13% (FY19A-FY22A). This implies that despite the lower percentage increase, the gross profit margin decrease is mainly due to the services segment.

A driver for the development of product-related cost of sales is inflation in raw materials and energy prices but also inflated personnel cost. For the services segment, the additional shortage in labour market and high fixed costs in connection with lower efficiency, caused by Covid-19-

related excess mortality of (FME's) patients, caused the cost of sales to increase unproportionally to revenues and thereby lower the company's profitability.

Higher personnel costs are further observable to impact OpEx (+25%), acting as an additional amplifier for negatively affecting FME's earnings.

Table 2 Trend Analysis – P&L (Cost Developments highlighted by Magnitude)

	Historicals			
	2019A	2020A	2021A	2022A
Total Revenue	100%	102%	101%	111%
ofw Healthcare Services	100%	102%	100%	111%
North America	100%	102%	99%	111%
EMEA	100%	101%	103%	107%
APAC	100%	101%	108%	113%
Latin America	100%	97%	100%	111%
Corporate (incl inter-segment consolidation adjustments)	100%	100%	150%	117%
ofw Healthcare Products	100%	104%	104%	110%
North America	100%	106%	103%	110%
EMEA	100%	105%	103%	105%
APAC	100%	103%	108%	118%
Latin America	100%	95%	97%	116%
Corporate (incl inter-segment consolidation adjustments)	100%	76%	84%	99%
Cost of Sales	100%	102%	104%	117%
ofw Cost of Raw Materials	100%	98%	97%	106%
ofw Cost of Purchased Services	100%	103%	105%	123%
ofw Personnel Cost	100%	103%	101%	116%
ofw Other Cost of Sale	100%	105%	122%	136%
Gross Profit Margin	100%	103%	94%	98%
Total OpEx	100%	104%	104%	125%
EBITDA Margin	100%	105%	89%	83%
D&A	100%	112%	102%	115%
EBIT Margin	100%	101%	80%	59%
EBT Margin	100%	105%	85%	66%
Net Income Margin	100%	100%	85%	62%

Sources: FME Annual Report 2022, Own Illustration

### 6.3 Ratio Analysis

This chapter outlines FME regarding long- and short-term investments, financing structure, liquidity, and profitability, thereby building the basis for forecasting the company's financials.

Inferences on FME's long-term investments illustrate a downsize in FY20A, but an expansion from FY21A onwards, with a growth spike in fixed assets (PP&E, RoU assets, intangible assets) in FY21A. D&A remains relatively flat at 6.4%-7.7% of total fixed assets. Historical CapEx is adjusted for the increase in goodwill therefore due to acquisitions (e.g., Inter-Well Health in 2022) considered an outlier.

Table 3 Investment Analysis – CapEx

EUR (m)	Historicals		
	2020A	2021A	2022A
Fixed Asset Growth	-5.7%	8.6%	4.6%
PP&E Growth	-3.2%	4.4%	-1.9%
RoU Assets Growth	-4.5%	4.5%	-3.0%
Intangible Assets Growth	-3.2%	5.7%	4.1%
CapEx	375.8	3,619.3	3,005.6
D&A	1,785.9	1,623.7	1,838.4
CapEx/ D&A	0.21x	2.23x	1.63x
<i>Implication: Is FME expanding or downsizing?</i>	Downsizing	Expanding	Expanding
<i>Implication: Is FME divesting?</i>	No	No	No
D&A as % of CapEx	<i>n/m</i>	44.9%	61.2%
D&A as % of Total Fixed Assets	7.7%	6.4%	6.9%
D&A as % of Revenue	10.0%	9.2%	9.5%
CapEx as % of Total Fixed Assets	1.6%	14.3%	11.4%
CapEx as % of Revenue	2.1%	20.5%	15.5%

Sources: FME Annual Report 2022, Own Illustration

The core Non-Cash Working Capital (NCWC) analysis underlines FME’s customer base (cost bearers) characteristics, consisting of governmental and private health insurers, leading with longer billing periods due to the complexity of reimbursement systems for provided healthcare services and bureaucratic burdens to high days sales outstanding (DSO) and ultimately, a positive cash-conversion-cycle (CCC). However, the payment of suppliers is, given FME’s market dominance and sheer size, questionable as days payables outstanding (DPO) should intuitively be higher.

Table 4 Investment Analysis – Core NCWC

	Historicals		
	2020A	2021A	2022A
DSO	69.7	70.6	68.5
DPO	24.6	24.5	23.2
DIO	52.7	57.2	56.1
<b>CCC</b>	<b>97.8</b>	<b>103.3</b>	<b>101.5</b>
<i>Implication: Clients are paying</i>		Later	Sooner
<i>Implication: FME is paying suppliers</i>		Sooner	Sooner
<i>Implication: Products stay on stock</i>		Longer	Less

Sources: FME Annual Report 2022, Own Illustration

Concerning the financing structure, the company generally showcases a healthy picture. The Interest Service Coverage Ratio (ISCR) is particularly vital, implying a great ability to withstand the current interest rate hikes, which cause interest expenses to go up. The relatively low level of the debt service coverage ratio (DSCR) is mainly driven by EUR 7.2bn in long-term borrowings, of which EUR >3.3bn mature between 2029 and 2031, as well as non-current leasing liabilities. Additionally, FME has proven to be capable of refinancing its debt. FME communicated a target leverage ratio of 3.0x–3.5x with its stakeholders and is committed to actively maintaining this range. The rating agency Fitch incorporated this effort and leaves FME at the lower bound of investment grade, BBB-. However, for Fitch, the outlook is negatively coined as FME’s transformation program lacks a clear operational path and is yet-to-be-proven to yield a positive long-term outcome. Putting the above in a nutshell, the risk of financial distress is moderate but is set to be closely monitored.

Table 5 Financing Analysis

	Historicals			
	2019A	2020A	2021A	2022A
Total Assets to Equity	1.9x	1.9x	1.8x	1.7x
Leverage	3.4x	2.8x	3.5x	3.8x
Book Value D/E	1.0x	0.9x	0.8x	0.8x
Book Value D/(D+E)	49.2%	47.9%	45.9%	43.6%
DSCR (Debt Service Coverage Ratio)	0.2x	0.2x	0.1x	0.1x
ISCR (Interest Service Coverage Ratio)	4.5x	5.4x	5.0x	3.6x
ACR (Asset Coverage Ratio)	0.8x	0.6x	0.7x	0.6x

Sources: FME Annual Report 2022, Own Illustration

With a constantly improving current ratio of >1x FME can meet its short-term obligations with its current assets. However, the liquidity ratios underline the capital-intensive nature of the dialysis business, resulting from WC requirements. To buffer potential cash shortcomings, management issued a revolving credit facility (RCF) of EUR 2bn.

Table 6 Liquidity Analysis

	Historicals			
	2019A	2020A	2021A	2022A
Current Ratio	1.1x	1.3x	1.2x	1.4x
Acid- Test Ratio	0.7x	0.8x	0.8x	0.9x
Cash Ratio	0.2x	0.2x	0.2x	0.2x
Free Cash Flow Ratio		0.6x	-0.2x	-0.1x

Sources: FME Annual Report 2022, Own Illustration

In terms of profitability, on the other hand, the company portrays a negative outlook with a decreasing ROIC of 3.3% in FY22. Respective countermeasures have been initiated (e.g., the restructuring program FME25), focussing on ROIC improvements with expected payoffs by 2025. A deterministic factor for FME's profitability is, next to the negative tendency in operating performance, the effective tax rate, which increased over the past four years to ~27%.

Table 7 Profitability Analysis

EUR (m)	Historicals			
	2019A	2020A	2021A	2022A
Effective Operating Tax Rate	21.8%	25.9%	22.4%	26.7%
EBIT	2,195.9	2,209.9	1,760.1	1,297.0
Invested Capital	27,070.6	24,590.5	27,007.8	28,782.8
<b>ROIC</b>	<b>6.3%</b>	<b>6.7%</b>	<b>5.1%</b>	<b>3.3%</b>
<b>ROE</b>	<b>10.9%</b>	<b>11.6%</b>	<b>8.7%</b>	<b>5.8%</b>
<b>ROA</b>	<b>5.5%</b>	<b>6.1%</b>	<b>4.7%</b>	<b>3.3%</b>

Sources: FME Annual Report 2022, Own Illustration

## 7. Financial Forecast

In this step, the three financial statements are modelled based on historical information, market research, own judgment, and management’s expectations to conduct the DCF, ultimately valuing FME. The forecast relates to 2023 (FY23E) to 2030 (FY30E) inclusive. The projection period is mainly designated to capture and reflect the underlying structural market- and consequently business drivers (Covid-19, aging population, the prevalence of diabetes and cardiovascular diseases, labour market dynamics, access to healthcare, etc.) on the one hand, and the transmission of FME’s transformation efforts and expected benefits towards a stable and steady business on the other hand.

### 7.1 Healthcare Services Revenue

Healthcare services, accounting for ~80% of group revenues build the starting point for the forecast. The services segment is structured around key geographic areas following FME’s go-to-market strategy. Revenue composites of the number of treated patients, the number of treatments per patient, and the revenue per patient.

The number of patients is forecasted for FY23E based on the historical deviation of FME’s issued projections and actual patient growth in respective regions. The company’s projection for 2023 is then applied to the median historical deviation. Reasoning and assumptions going forward are presented below.

Table 8 FME’s Dialysis Patient Forecast

Patient Growth Forecast	(A) Median Historical Deviation	(B) FME Projection 2023	Patient Growth Forecast FY23E (A+B)	Patient Growth Forecast FY24E- FY30E	Rationale/ Reasoning/ Assumptions
North America	-1.0%	1%	<b>0%</b>	0.9% p.a.	<ul style="list-style-type: none"> <li>▪ Already Strong coverage of total dialysis patients (e.g., ~30% of all US dialysis patients)</li> </ul>
EMEA	-2.3%	3%	<b>0.7%</b>	1.1% p.a.	<ul style="list-style-type: none"> <li>▪ Historical Patient Growth rolled forward</li> </ul>
APAC	-3.2%	6%	<b>2.8%</b>	2.8% p.a. + 0.05% p.a.	<ul style="list-style-type: none"> <li>▪ Prevalence of Covid-19 effect in FY23E.</li> <li>▪ Additional rise by 0.05% each year due to increase of disposable income, healthcare getting more accessible, and improved diagnostics leading to a higher detection of ESRD affected patients and therefore higher demand for dialysis treatment</li> </ul>
Latin America	0.9%	3%	<b>3.9%</b>	3.9% p.a.+ 0.05% p.a.	

FME Patients by Region	Historicals		Explicit Forecast						
	2022A	2023	2024	2025	2026	2027	2028	2029	2030
Dialysis Patients North America	208,310	208,392	210,322	212,270	214,236	216,221	218,224	220,245	222,285
<i>Growth</i>	-0.5%	0.0%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
Dialysis Patients EMEA	66,063	66,530	67,237	67,951	68,672	69,401	70,138	70,883	71,635
<i>Growth</i>	0.7%	0.7%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Dialysis Patients APAC	34,001	34,967	35,978	37,036	38,143	39,303	40,518	41,791	43,124
<i>Growth</i>	0.7%	2.8%	2.9%	2.9%	3.0%	3.0%	3.1%	3.1%	3.2%
Dialysis Patients Latin America	36,313	37,734	39,230	40,804	42,462	44,209	46,049	47,989	50,035
<i>Growth</i>	-1.3%	3.9%	4.0%	4.0%	4.1%	4.1%	4.2%	4.2%	4.3%

Sources: FME Annual Report, Own Estimates

Generally, a HD patient (used as a proxy for overall dialysis treatments) requires three (in-clinic) treatments per week, resulting in 156 treatments per year. FME's number of treatments per patient experienced a decline in last the years (e.g., 156 in FY20A and 153 in FY22A for North America), mainly due to Covid-19 as in-clinic treatments raised the risk for the immunocompromised patients to get infected with the virus. A recovery of treatments per patient is expected to occur from FY24E onwards, with +1% per year and a cap of 156 treatments per year.

The revenue per treatment is highly dependent on the healthcare systems and the remuneration of statutory and private (employer-sponsored) health insurances, which strongly varies for countries and regions. With the US being the most important market for FME, the country is used to assess the North American market. An in-depth explanation of the US forecast is provided in [Appendix 14](#).

In the US, the Centers for Medicare & Medicaid Services (CMS), accounting for 26% of FME's group revenues, sets a flat rate remuneration per treatment per patient each year for the following year. CMS's average historical remuneration contribution share for FME is 63% per patient per treatment. This is fixed for the forecast. Dependent factors and corresponding forecasts are highlighted below.

Table 9 CMS Compensation Rate Composition

Revenue per Treatment North America	Flat Rate Renumeration for 2023	Flat Rate Renumeration Increase Factors	Corresponding Values for the 2023 Rate	Forecast of Renumeration Factors FY24E- FY30E
CMS (Medicare)	USD 265.56	(A) ESRD Market Basket Factor (B) Multi-Factor Productivity Index (C) Wage Index Budget-Neutrality Factor	(A) 3.1% (B) 0.1% (C) 0.99973	(A) US Inflation Rate Estimates (for each prior Year) (B) 0.1% Roll Forward (C) 0.99973 Roll Forward

Sources: Centers for Medicare & Medicaid Services 2022, Own Estimates

The remaining 37% are forecasted by computing the historical deviation from the price increase (in USD) to the US inflation rate from prior year. First, the historical median deviation is applied to the US inflation forecast (IMF, 2023). The price per treatment is then converted to EUR by approximating the forward exchange rate by the divergence between the EU and US inflation rates and weighted according to the contribution share. The foreign exchange approximation certainly has several limitations, but the breakdown method of prices in USD is considered the most detailed approach.

Table 10 Revenue per Treatment Forecast North America

Revenue per Treatment Forecast North America	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
FME Revenue per Treatment North America (in EUR)	344.86	344.08	338.37	387.90	396.59	418.37	429.08	438.30	446.73	455.03	464.26	473.67
		-0.78	-5.71	49.53	8.69	21.78	10.71	9.22	8.43	8.31	9.23	9.41
<b>North America</b>												
Price Increase per Treatment North America (in EUR)		-0.78	-5.71	49.53	8.69	21.78	10.71	9.22	8.43	8.31	9.23	9.41
Growth		-0.2%	-1.7%	14.6%	2.2%	5.5%	2.6%	2.1%	1.9%	1.9%	2.0%	2.0%
ofw is attributable to Currency Effects		-3.8%	-3.2%	10.3%								
ofw is attributable to Price Increases		3.6%	1.5%	4.3%								
USD/ EUR	0.89	0.88	0.85	0.95								
Revenue per Treatment North America in USD	386.06	392.91	400.22	408.60								
<b>Thereof ESRD Flat Rate Compensation (Medicare/ CMS) in USD per Treatment</b>	<b>235.27</b>	<b>239.33</b>	<b>253.13</b>	<b>257.90</b>	<b>265.56</b>	<b>277.22</b>	<b>283.30</b>	<b>288.90</b>	<b>294.30</b>	<b>299.84</b>	<b>305.72</b>	<b>311.72</b>
Growth Factor		1.7%	5.8%	1.88%	2.97%	4.39%	2.19%	1.98%	1.87%	1.88%	1.96%	1.96%
Factor (Inflation minus Productivity Index Factor)		1.7%	1.8%	1.9%	3.0%	4.4%	2.2%	2.0%	1.9%	1.9%	2.0%	2.0%
ESRD Market Basket Factor (Inflation)		1.8%		2.4%	3.1%	4.5%	2.3%	2.1%	2.0%	2.0%	2.1%	2.1%
Multi- Factor Productivity Index		0.1%		0.5%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Wage Index Budget- Neutrality Adjustment Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Inclusion of Transitional Drug Add- On Payment Adjustment (TDAPA) in USD			9.93									
EUR/ USD	1.12	1.14	1.18	1.05	1.06	1.05	1.05	1.05	1.05	1.05	1.05	1.05
<b>ESRD Flat Rate Compensation (Medicare/ CMS) in EUR</b>	<b>210.16</b>	<b>209.58</b>	<b>214.01</b>	<b>244.83</b>	<b>250.16</b>	<b>263.73</b>	<b>270.31</b>	<b>275.93</b>	<b>281.06</b>	<b>286.10</b>	<b>291.71</b>	<b>297.43</b>
Growth		-0.3%	2.1%	14.4%	2.2%	5.4%	2.5%	2.1%	1.9%	1.8%	2.0%	2.0%
<b>ESRD CMS Flat Rate Share on Total Revenue per Patient North America</b>		<b>60.9%</b>	<b>63.2%</b>	<b>63.1%</b>	<b>62.4%</b>	<b>62.4%</b>	<b>62.4%</b>	<b>62.4%</b>	<b>62.4%</b>	<b>62.4%</b>	<b>62.4%</b>	<b>62.4%</b>
<b>Thereof not contributed by CMS/ Medicare</b>	<b>150.79</b>	<b>153.58</b>	<b>147.09</b>	<b>150.70</b>	<b>155.44</b>	<b>162.54</b>	<b>166.39</b>	<b>169.97</b>	<b>173.45</b>	<b>177.02</b>	<b>180.80</b>	<b>184.67</b>
Development of Price Increase non attributable to CMS		1.8%	-4.2%	2.5%	3.1%	4.6%	2.4%	2.2%	2.0%	2.1%	2.1%	2.1%
Prior Year Inflation Rate (US) adj. to CMS ESRD Basket Factor (20', 21', and 23')		1.8%	1.3%	2.4%	3.1%	4.5%	2.3%	2.1%	2.0%	2.0%	2.1%	2.1%
Deviation from Prior Year Inflation Rate		0.0%	-5.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
USD/ EUR	1.12	1.14	1.18	1.05	1.06	1.05	1.05	1.05	1.05	1.05	1.05	1.05
<b>ESRD Flat Rate Compensation (Medicare/ CMS) in EUR</b>	<b>134.70</b>	<b>134.49</b>	<b>124.36</b>	<b>143.07</b>	<b>146.43</b>	<b>154.63</b>	<b>158.76</b>	<b>162.34</b>	<b>165.65</b>	<b>168.91</b>	<b>172.52</b>	<b>176.20</b>
Growth		-0.2%	-7.5%	15.0%	2.3%	5.6%	2.7%	2.3%	2.0%	2.0%	2.1%	2.1%

Sources: FME Annual Report, Centers for Medicare & Medicaid Services 2021-2022, Own Estimates

For EMEA, APAC, and Latin America, the historic revenue per treatment development was back-tested against the EU inflation rates (again for the prior years because of the slow dialysis services businesses nature), and the median deviation applied to the IMF's forecasted inflation rates for the EU.

Table 11 Price per Treatment Forecast (in %) for EMEA, APAC, and Latin America

Price Growth per Treatment Actual vs. EU Infl.	Historicals			Median Hist. Dev.	Explicit Forecast							
	2020A	2021A	2022A		2023	2024	2025	2026	2027	2028	2029	2030
Price Increase per Treatment EMEA	-0.8%	5.0%	3.7%		10.1%	7.1%	4.1%	3.2%	2.9%	2.8%	2.8%	2.8%
Prior Year Inflation Rate (European Union)	1.4%	0.7%	2.9%		9.3%	6.3%	3.3%	2.4%	2.1%	2.0%	2.0%	2.0%
Deviation from Prior Year Inflation Rate	-2.2%	4.3%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
Price Increase per Treatment APAC	-1.1%	5.2%	2.9%		9.3%	6.3%	3.3%	2.4%	2.1%	2.0%	2.0%	2.0%
Prior Year Inflation Rate (European Union)	1.4%	0.7%	2.9%		9.3%	6.3%	3.3%	2.4%	2.1%	2.0%	2.0%	2.0%
Deviation from Prior Year Inflation Rate	-2.5%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Price Increase per Treatment Latin America	-11.0%	2.8%	13.7%		11.4%	8.4%	5.4%	4.5%	4.2%	4.1%	4.1%	4.1%
Prior Year Inflation Rate (European Union)	1.4%	0.7%	2.9%		9.3%	6.3%	3.3%	2.4%	2.1%	2.0%	2.0%	2.0%
Deviation from Prior Year Inflation Rate	-12.4%	2.1%	10.8%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%

Sources: FME Annual Report, Own Estimates

Ultimately, the forecasted revenues per treatment by region were multiplied by the number of treatments per year per patient and by the number of patients to compute the revenue of dialysis service by region with the following results.

Table 12 Healthcare Services Revenue Forecast by Region

Healthcare Services Revenue (EURm)	Historicals			Explicit Forecast						
	2022A	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Healthcare Services Revenue</b>	15,418	15,937	17,098	17,839	18,611	19,429	20,263	21,144	21,895	
Revenue North America	12,331	12,474	13,268	13,721	14,203	14,742	15,331	15,951	16,425	
Revenue EMEA	1,478	1,636	1,787	1,896	2,005	2,099	2,181	2,266	2,355	
Revenue APAC	1,025	1,163	1,296	1,404	1,515	1,625	1,708	1,796	1,890	
Revenue Latin America	556	635	716	786	855	928	1,006	1,092	1,186	
Corporate (incl. inter-segm. consol. Adj.)	29	29	31	32	33	35	36	38	39	
<b>Services Revenue Growth Total</b>		3.37%	7.28%	4.33%	4.33%	4.39%	4.29%	4.35%	3.55%	
Services Revenue Growth by Region										
North America	12.7%	1.2%	6.4%	3.4%	3.5%	3.8%	4.0%	4.05%	2.97%	
EMEA	4.3%	10.7%	9.2%	6.1%	5.7%	4.7%	3.9%	3.9%	3.9%	
APAC	4.5%	13.4%	11.4%	8.3%	8.0%	7.2%	5.1%	5.2%	5.2%	
Latin America	10.8%	14.4%	12.7%	9.7%	8.8%	8.5%	8.5%	8.5%	8.6%	
Corporate (incl. inter-segm. consol. Adj.) as % of Healthcare Services	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	

Sources: FME Annual Report, Own Estimates

## 7.2 Healthcare Products Revenue

Healthcare products are highly intertwined with healthcare services and strongly dependent on the number of dialysis patients globally. Therefore, based on FME's estimates for market share by patients, the global number of patients was extrapolated.

Table 13 Extrapolated global Patient Forecast by Region (k)

Global Dial. Pat. Forecast (in k)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
<b>Dialysis Patients Worldwide</b>	<b>3,533</b>	<b>3,682</b>	<b>3,773</b>	<b>3,902</b>	<b>4,055</b>	<b>4,239</b>	<b>4,442</b>	<b>4,661</b>	<b>4,896</b>	<b>5,150</b>	<b>5,426</b>	<b>5,722</b>
<i>Dialysis Patients Growth</i>	0%	4%	2%	3%	4%	5%	5%	5%	5%	5%	5%	5%
<b>Dialysis Patients by Region (excl. FME's Patients)</b>												
North America	479.5	497.1	500.2	497.8	499.8	507.6	515.4	523.4	531.5	539.7	548.0	556.4
<i>Growth</i>		2.4%	0.3%	-0.5%	0.3%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
EMEA	775.9	793.6	793.7	814.8	832.6	852.6	872.9	893.8	915.1	937.0	959.3	982.2
<i>Growth</i>		2.1%	0.0%	2.5%	2.1%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
APAC	1,675.5	1,767.3	1,829.8	1,941.7	2,047.1	2,175.1	2,318.2	2,472.7	2,639.8	2,822.3	3,022.0	3,237.1
<i>Growth</i>		5.4%	3.5%	6.0%	5.4%	6.2%	6.5%	6.6%	6.7%	6.9%	7.0%	7.1%
Latin America	257.0	277.4	303.9	303.0	328.0	351.0	377.6	407.1	440.0	476.1	515.7	559.2
<i>Growth</i>		7.8%	8.3%	-0.4%	7.8%	6.7%	7.2%	7.5%	7.7%	7.8%	8.0%	8.1%

Sources: FME Annual Report, Own Estimates

From thereon, the product revenue per patient was calculated (excluding FME patients) as the products are sold to third-party dialysis services providers, hospitals, and other institutions.

Potential changes in product offerings can be shifts in demand for home dialysis products (e.g., home HD machines and PD consumables). Assumably, the effect on revenue per patient is rather insignificant as the product volume would be higher, but the prices per unit would be lower. Therefore, the volume is fixed, and the delta in revenue per customer is primarily adjusted for inflation (renumeration) related price changes.

For North America, the price increases for services, relying on CMS and other payers, are applied towards the revenue per patient. DaVita Inc., the second largest dialysis provider in the US, is a product customer and, therefore, as well as other US customers, is highly exposed to the CMS renumeration changes. Product prices are expected to increase at a 2% rate lower than the compensation because otherwise, customers would experience significant margin decreases and potentially change suppliers.

For the other regions, namely EMEA, APAC, and Latin America, historical revenues per customer were analysed against the EU inflation rate and the deviation applied to the inflation rate forecast.

Table 14 Product Revenue per Patient (excluding FME Patients)

Product Revenue per Patient by Region (in EUR)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
North America	2,319	2,369	2,293	2,449	2,455	2,585	2,646	2,697	2,744	2,789	2,840	2,892
Growth		2.2%	-3.2%	6.8%	0.2%	5.3%	2.4%	1.9%	1.7%	1.7%	1.8%	1.8%
EMEA	1,691	1,729	1,698	1,686	1,801	1,869	1,885	1,883	1,876	1,867	1,858	1,849
Growth		2.2%	-1.8%	-0.7%	6.8%	3.8%	0.8%	-0.1%	-0.4%	-0.5%	-0.5%	-0.5%
APAC	568	556	562	580	635	677	701	719	736	753	769	787
Growth		-2.2%	1.2%	3.1%	9.5%	6.5%	3.5%	2.6%	2.3%	2.2%	2.2%	2.2%
Latin America	808	711	664	796	812	808	783	756	731	711	694	681
		-12.0%	-6.6%	20.0%	2.0%	-0.5%	-3.0%	-3.4%	-3.2%	-2.8%	-2.3%	-1.8%
<b>Product Revenue Growth per Patient</b>												
<i>Growth in Product Revenue per Patient North America</i>					<b>0.2%</b>	<b>5.3%</b>	<b>2.4%</b>	<b>1.9%</b>	<b>1.7%</b>	<b>1.7%</b>	<b>1.8%</b>	<b>1.8%</b>
<i>Price Increase in Line but 2% below derived Remuneration</i>					0.2%	5.3%	2.4%	1.9%	1.7%	1.7%	1.8%	1.8%
					<i>from 2023 onwards Inflation Rate + Median Historical Deviation determines the projected Revenue per Patient Growth (Number in Bolt)</i>							
<i>Growth in Product Revenue per Patient EMEA</i>					<b>6.8%</b>	<b>3.8%</b>	<b>0.8%</b>	<b>-0.1%</b>	<b>-0.4%</b>	<b>-0.5%</b>	<b>-0.5%</b>	<b>-0.5%</b>
<i>Prior Year Inflation Rate (European Union)</i>					9.3%	6.3%	3.3%	2.4%	2.1%	2.0%	2.0%	2.0%
<i>Deviation from Prior Year Inflation Rate</i>					-2.5%	-2.5%	-2.5%	-2.5%	-2.5%	-2.5%	-2.5%	-2.5%
					<i>from 2023 onwards Inflation Rate + Median Historical Deviation determines the projected Revenue per Patient Growth (Number in Bolt)</i>							
<i>Growth in Product Revenue per Patient APAC</i>					<b>9.5%</b>	<b>6.5%</b>	<b>3.5%</b>	<b>2.6%</b>	<b>2.3%</b>	<b>2.2%</b>	<b>2.2%</b>	<b>2.2%</b>
<i>Prior Year Inflation Rate (European Union)</i>					9.3%	6.3%	3.3%	2.4%	2.1%	2.0%	2.0%	2.0%
<i>Deviation from Prior Year Inflation Rate</i>					0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
					<i>from 2023 onwards Inflation Rate + Median Historical Deviation + 0.5% Recoup each following Year determines the projected Revenue per Patient Growth (Number in Bolt)</i>							
<i>Growth in Product Revenue per Patient Latin America</i>					<b>2.0%</b>	<b>-0.5%</b>	<b>-3.0%</b>	<b>-3.4%</b>	<b>-3.2%</b>	<b>-2.8%</b>	<b>-2.3%</b>	<b>-1.8%</b>
<i>Prior Year Inflation Rate (European Union)</i>					9.3%	6.3%	3.3%	2.4%	2.1%	2.0%	2.0%	2.0%
<i>Deviation from Prior Year Inflation Rate</i>					-7.3%	-6.8%	-6.3%	-5.8%	-5.3%	-4.8%	-4.3%	-3.8%

Sources: FME Annual Report, Own Calculations

Ultimately, the product revenue per patient is multiplied by the number of patients by region to yield the total product revenue for the respective regions.

Table 15 Healthcare Products Revenue Forecast

Healthcare Products Revenue (EURm)	Historicals	Explicit Forecast							
	2022A	2023	2024	2025	2026	2027	2028	2029	2030
<b>owf Healthcare Products</b>	3,980	4,314	4,683	4,952	5,206	5,465	5,744	6,050	6,382
North America	1,219	1,227	1,312	1,364	1,412	1,458	1,505	1,556	1,609
EMEA	1,374	1,499	1,594	1,645	1,683	1,717	1,749	1,782	1,816
APAC	1,126	1,300	1,472	1,624	1,778	1,943	2,124	2,325	2,546
Latin America	241	266	283	296	308	322	338	358	381
Corporate (incl. inter-segm. consol. Adj.)	20	20	22	24	25	26	27	29	30
<b>Products Revenue Growth Total</b>		8.4%	8.6%	5.7%	5.1%	5.0%	5.1%	5.3%	5.5%
Products Revenue Growth by Region									
North America	6.3%	0.6%	6.9%	3.9%	3.5%	3.3%	3.2%	3.4%	3.4%
EMEA	1.9%	9.2%	6.3%	3.2%	2.3%	2.0%	1.9%	1.9%	1.9%
APAC	9.4%	15.5%	13.2%	10.3%	9.5%	9.3%	9.3%	9.5%	9.5%
Latin America	19.7%	10.4%	6.4%	4.3%	4.1%	4.6%	5.1%	5.8%	6.4%
Corporate (incl. inter-segm. consol. Adj.)	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
as % of Total Healthcare Products									

Sources: FME Annual Report, Own Illustration

### 7.3 Cost of Sales, SG&A, R&D, and Income from Associated Companies

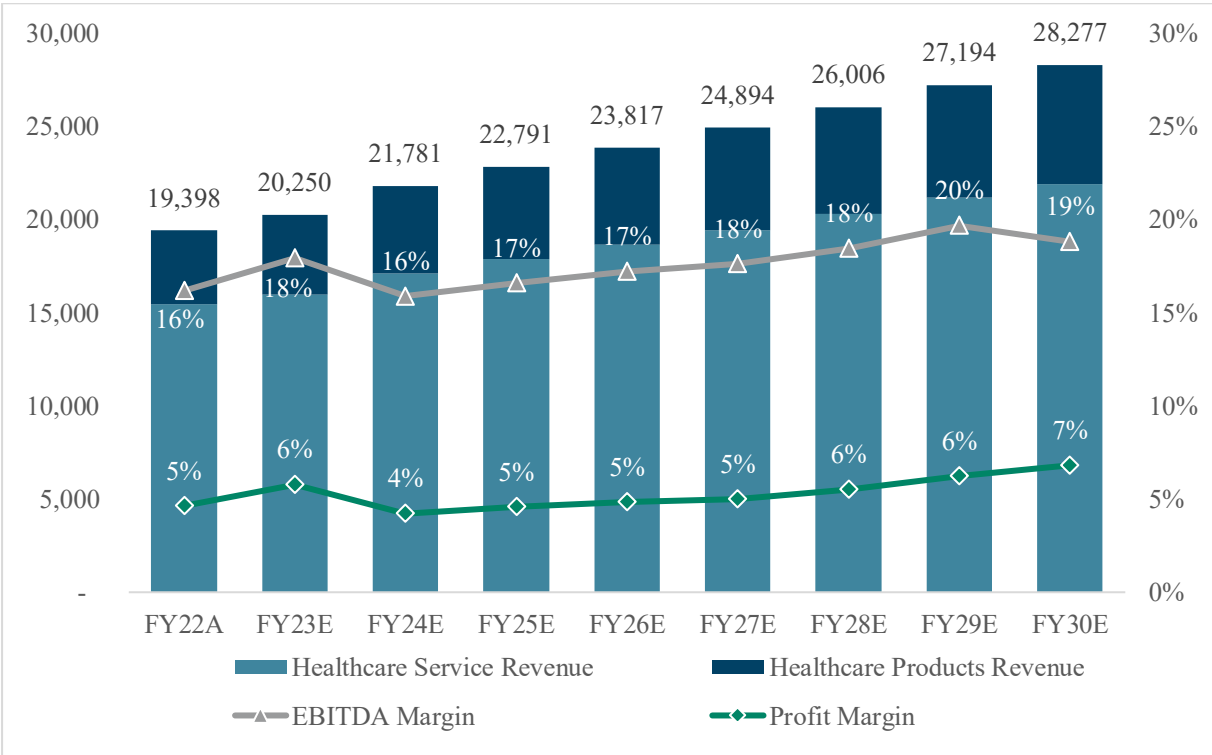
Cost of sales are split by type of cost (cost of raw materials, cost of purchased services, personnel cost, and other cost of sales). The effect of changes in raw material price is factored in for the cost of raw materials. Personnel costs are forecasted in a top-down approach from the historic revenue per employee, reconciled to the number of employees required to achieve the projected revenue. The total number of employees required is then broken down to the historical share of employees engaged in production and services. Over the forecasting period, a productivity adjustment for the revenue per employee is in line with FME's new organisational structure, which is intended to lower bureaucratic hurdles and increase efficiency. The productivity is anticipated to rise in FY24 employees first need to adapt to the new operating model to unlock the efficiency potential. This surplus in productivity is expected to lower over throughout the projection, similarly to synergies. Additionally, price increases for the average cost per employee are assumed due to the healthcare professional scarcity and wage-price spiral. Differences in regions are included. Although, certain cost (e.g., US Ballot initiatives) are business model specific forecasted, restructuring expenses are accounted for aligned with FME's assessment of one-time investments up to EUR 650m by 2025, SG&A follows the cost by type method. For R&D, FME communicated with shareholders rationalizing efforts, which are incorporated in the forecast.

Income from associated companies is forecasted by using the historical average of the income on the BV of investments in associated companies and applying it to the corresponding forecast value, which is held constant, following a ROE like approach. Additional in-depth explanations for P&L line items are highlighted in [Appendix 15](#), [16](#), [17](#), [18](#).

### 7.4 Summary of Income Statement

The income statement is forecasted for each line item not only by analysing and elaborating on respective drivers individually but also by highlighting the interdependency and resulting implications on the firm’s profitability. A summary of the profit and loss statement forecast is portrayed below. The top-line is anticipated to grow at a CAGR of 4.8% (FY22A-FY30E) with an increasing profit margin, overall aligned with management’s expectations.

Table 16 FME’s Income Statement Forecast (EURm)



Sources: FME Annual Report, Own Estimates

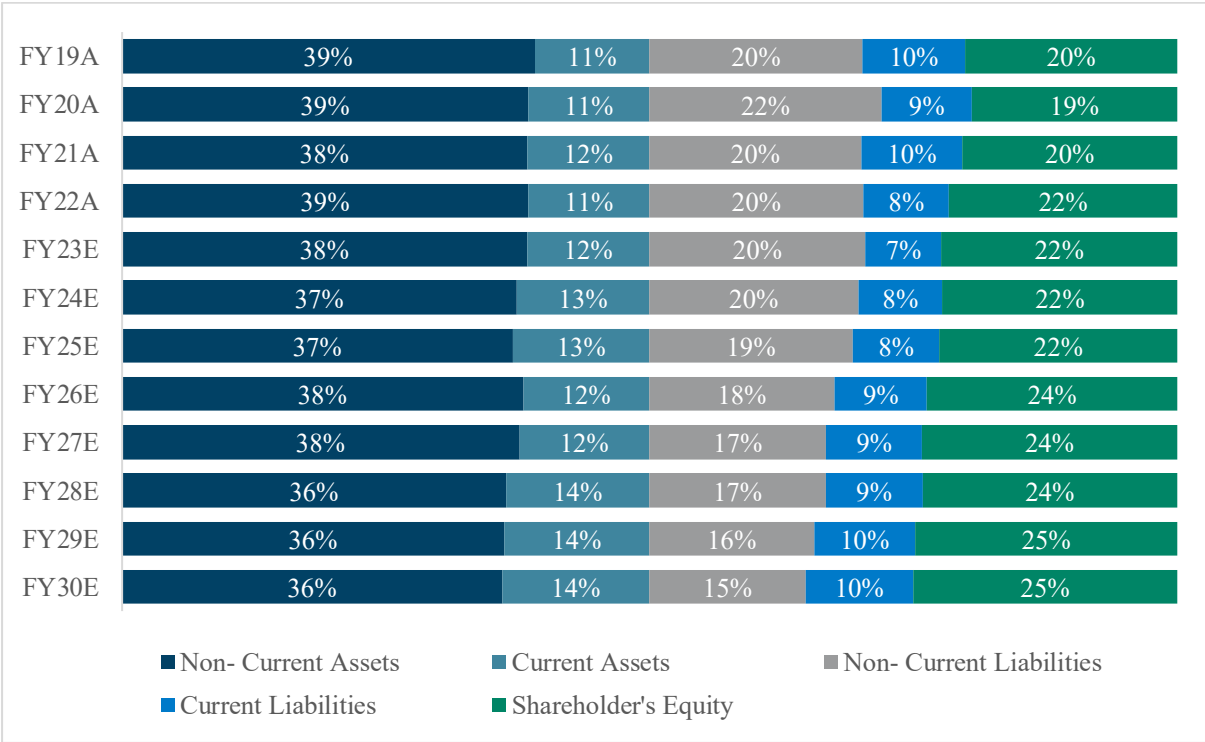
The total composition of the historical and forecasted income statement is provided in [Appendix 19](#).

### 7.5 Balance Sheet

On the asset side of the balance sheet, goodwill increased in recent years due to acquisitions (e.g., InterWell Health in FY22A). However, according to management, FME will restrain from engaging in excessive acquisitive activities, implying constant goodwill over time. Furthermore, the company does not intend to expand in the near future, but rather focus on and optimize its current portfolio of assets and operations. Therefore, PP&E and RoU Assets are projected to slightly decrease over the projection horizon.

With fixed repayment of debt over the projection period and limited refinancing goals, FME is actively managing its financing structure to hold the target leverage range of 3.0x-3.5x by 2025 and, therewith also, its investment grade rating. Equity issuances are not anticipated.

Figure 17 Balance Sheet Composition Forecast



Sources: FME Annual Report, Own Estimates

More information on the forecast balance sheet forecast is provided in [Appendix 20](#).

### 7.5.1 Working Capital

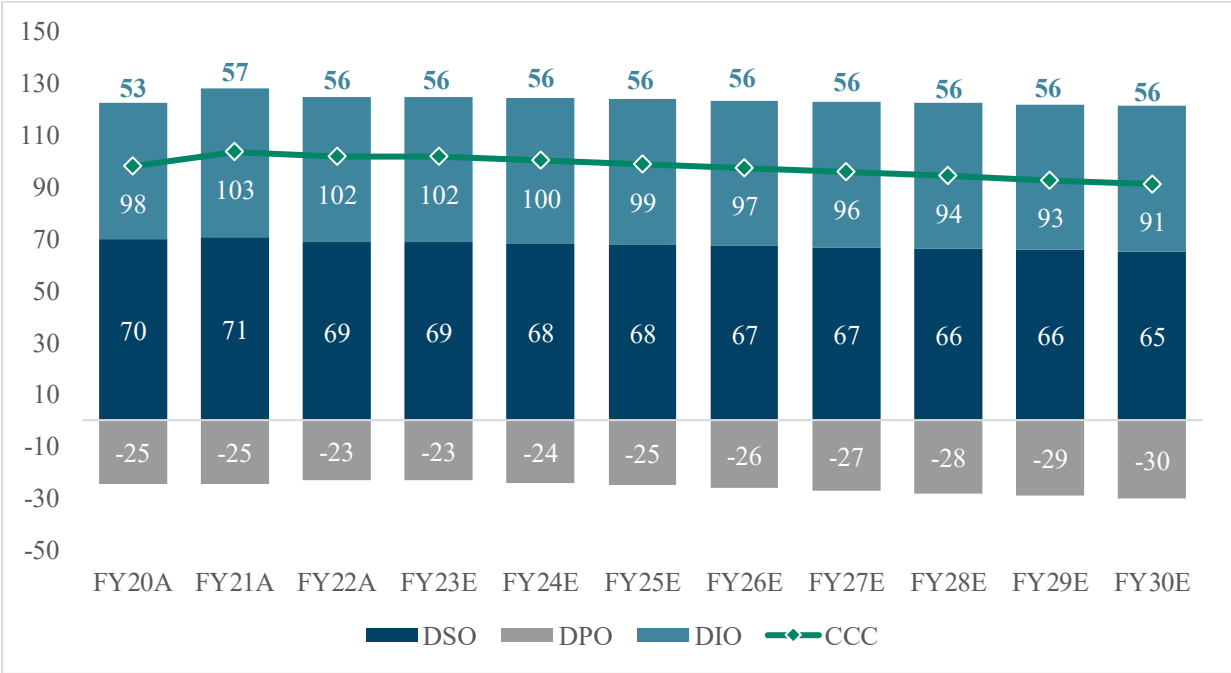
The core NCWC is forecasted using the sales and cost of sales-related DSO, DPO, and days inventory outstanding (DIO) techniques.

Accounts receivable mostly consist of yet-to-be-paid dialysis services, meaning that governmental health programs and insurances are the main business counterparts. As the DSO is strongly related to local jurisdictions and regulations, DSO is assumed to will only marginally decrease over time. Bureaucracy is generally adapting automation software and streamlining payments at a slower pace. A key determining factor is also FME’s knowledge of local laws and authorities. For the US (~30% of accounts receivables), the DSO increased in FY22A due to the offsetting effect of CMS’ advanced payments part of the early payment program in 2020 (Covid-19 effect). It is considered a one-time effect and return to normalized levels.

DIO is expected to remain flat and DPO to increase slightly, as FME’s market power should positively impact it to improve to ~30 days.

The business model with respective governments and insurance companies as contract parties cause high receivables maturities, which are linked to sales and, thus growth, leading to a negative NCWC over the projection period.

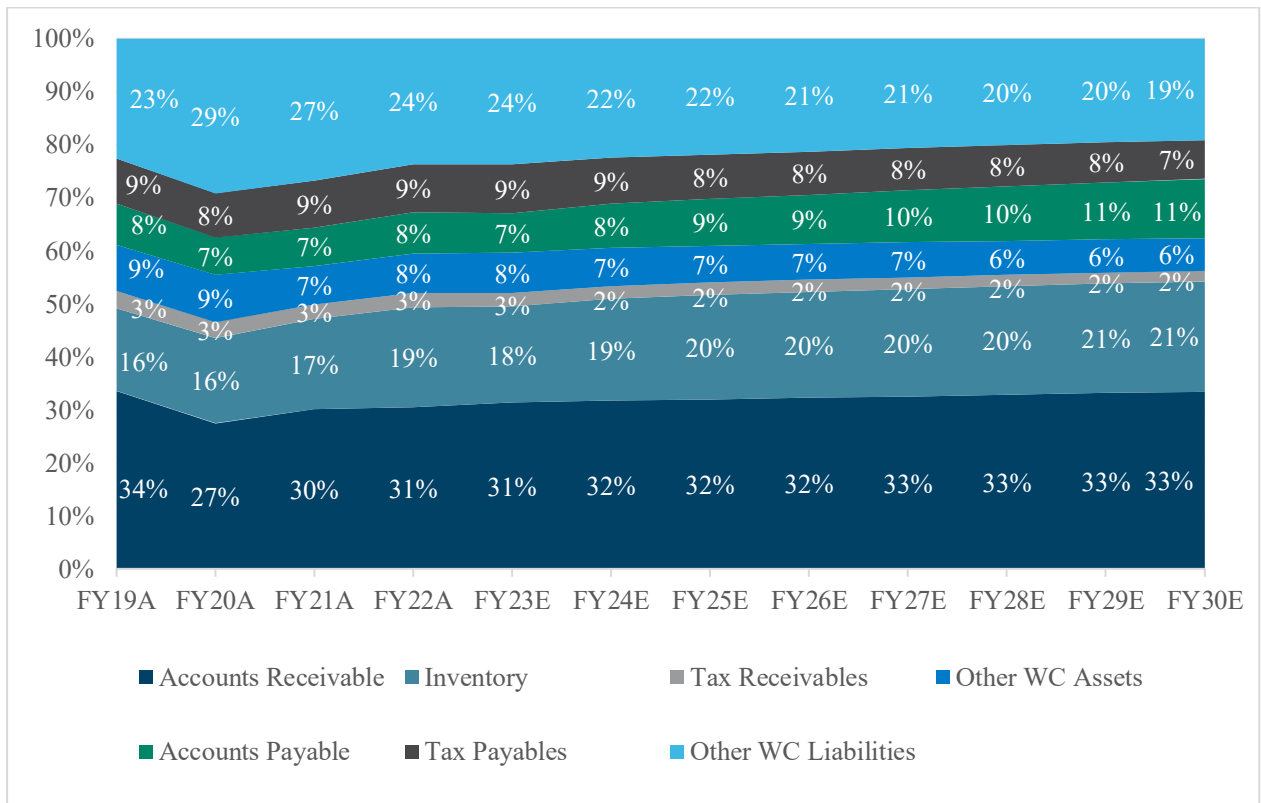
Figure 18 CCC Historical and Forecast by Elements (DSO for Illustration Purposes shown negative)



Source: Own Estimates

Other items classified as NCWC are held constant (see also [Appendix 20](#)).

Figure 19 NCWC Composition Forecast



Sources: FME Annual Report, Own Estimates

## 7.5.2 CapEx and D&A

With FME limiting its acquisitions (e.g., of dialysis clinics) and organic expansion, CapEx is mainly maintenance related and used for (production) facility improvements. In addition, the company is further engaged into sale- and lease- back transactions for production assets and buildings, raising RoU assets. For these reasons, CapEx is forecasted to remain at a ratio of below one (CapEx to D&A) and at a constant rate of 8.8% of total sales.

Table 17 CapEx and D&A Schedule Forecast

EUR (m)	Explicit Forecast								
	2023	2024	2025	2026	2027	2028	2029	2030	
Existing Assets (Gross Asset Value) FY22A	20,465.6	(1,747.8)	(1,747.8)	(1,747.8)	(1,747.8)	(1,747.8)	(1,747.8)	(1,747.8)	
CapEx FY23E	1,777.6	(70.0)	(139.9)	(139.9)	(139.9)	(139.9)	(139.9)	(139.9)	
CapEx FY24E	1,911.9	-	(75.3)	(150.5)	(150.5)	(150.5)	(150.5)	(150.5)	
CapEx FY25E	2,000.6	-	-	(78.7)	(157.5)	(157.5)	(157.5)	(157.5)	
CapEx FY26E	2,090.6	-	-	-	(82.3)	(164.6)	(164.6)	(164.6)	
CapEx FY27E	2,185.2	-	-	-	-	(86.0)	(172.0)	(172.0)	
CapEx FY28E	2,282.8	-	-	-	-	-	(89.8)	(179.7)	
CapEx FY29E	2,387.0	-	-	-	-	-	-	(94.0)	
CapEx FY30E	2,482.2	-	-	-	-	-	-	-	
<b>Total D&amp;A</b>		<b>(1,817.7)</b>	<b>(1,963.0)</b>	<b>(2,117.0)</b>	<b>(2,278.0)</b>	<b>(2,446.3)</b>	<b>(2,622.1)</b>	<b>(2,805.9)</b>	<b>(2,482.2)</b>

Sources: FME Annual Report, Own Illustration

D&A is calculated on a straight-line basis and charged on the existing gross asset base (PP&E, RoU assets, and amortizable intangible assets such as distribution agreements) and newly purchased assets. For PP&E and RoU assets D&A comes down to buildings, improvements (e.g., production facilities and dialysis clinics), and machinery. Newly acquired assets are depreciated according to their respective useful life. Weighted by the magnitude and type of assets, the average useful life is set at 12.7 years.

Table 18 Useful Life Calculation based on FY22A

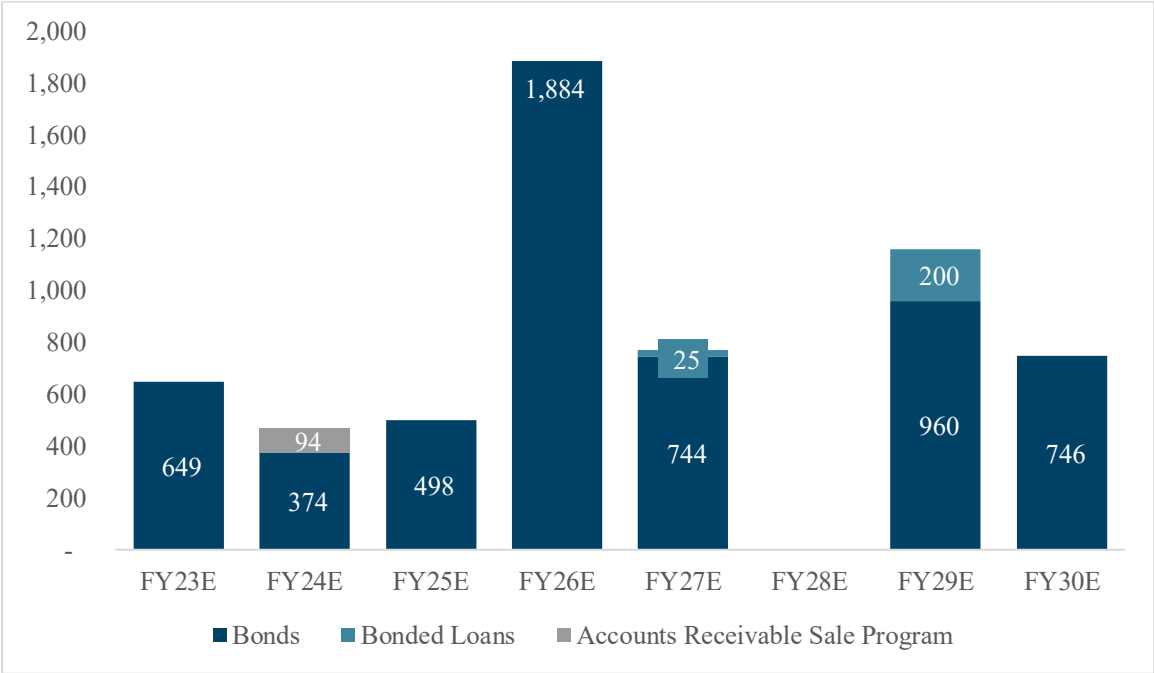
Underlying Asset	Gross Asset Value	Weighting	Average Useful Life
Land	108.0	0.5%	27.0
Buildings and Improvements	10,982.0	53.7%	15.0
Machinery and Equipment	6,460.9	31.6%	11.0
Construction in Progress	352.9	1.7%	-
Intangible Assets (Non-compete Agreements)	351.8	1.7%	7.0
Intangible Assets (Technology)	686.1	3.4%	12.0
Intangible Asset (Licenses and Distribution Agreements)	168.7	0.8%	12.0
Intangible Assets (Customer Relationships)	75.0	0.4%	6.0
Intangible Assets (Construction in Progress)	359.6	1.8%	6.0
Intangible Assets (Internally developed Intangibles)	506.3	2.5%	6.0
Intangible Assets (Other)	414.2	2.0%	7.0
<b>Total</b>	<b>20,465.6</b>	<b>100%</b>	<b>12.7</b>

Sources: FME Annual Report, Own Illustration

### 7.5.3 Debt and Interest

FME has mostly outstanding USD and EUR bonds for long-term debt, with a weighted maturity of 5.5 years which will be repaid during the projection period (except for two bonds in FY31E). Despite that, FME issued a bonded loan in FY22A of EUR 225m for refinancing and operational purposes. The RCF of EUR 2bn has not yet been drawn and is an important part of the firm’s liquidity buffer.

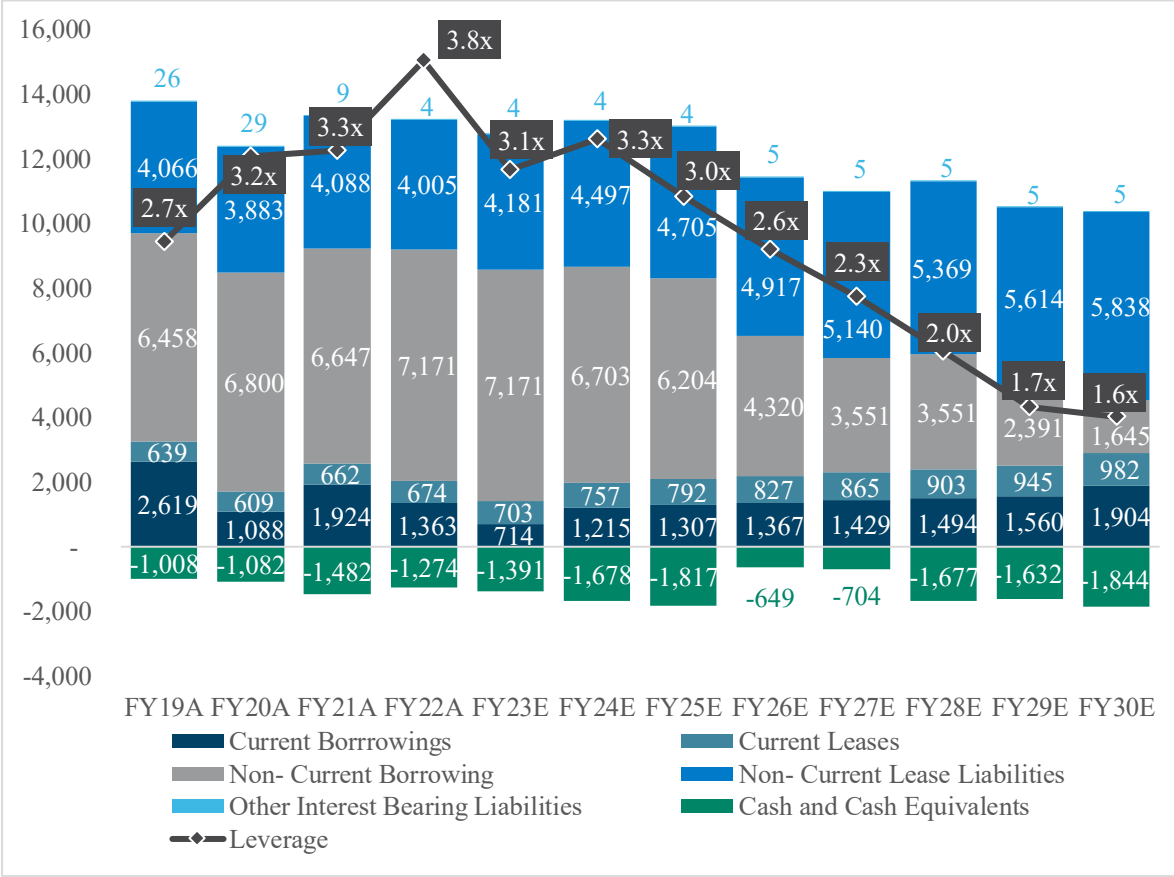
Figure 20 Fixed Debt Repayment Schedule (EURm)



Sources: FME Annual Report 2022, Own Illustration

Until 2030, the company is expected to repay existing debt and marginally use refinancing or RCF options. With the scheduled payments, operational margin improvements, and limited CapEx, the company can lower its leverage to 3.0x by FY25E, thereby underlining its commitment to effective capital management.

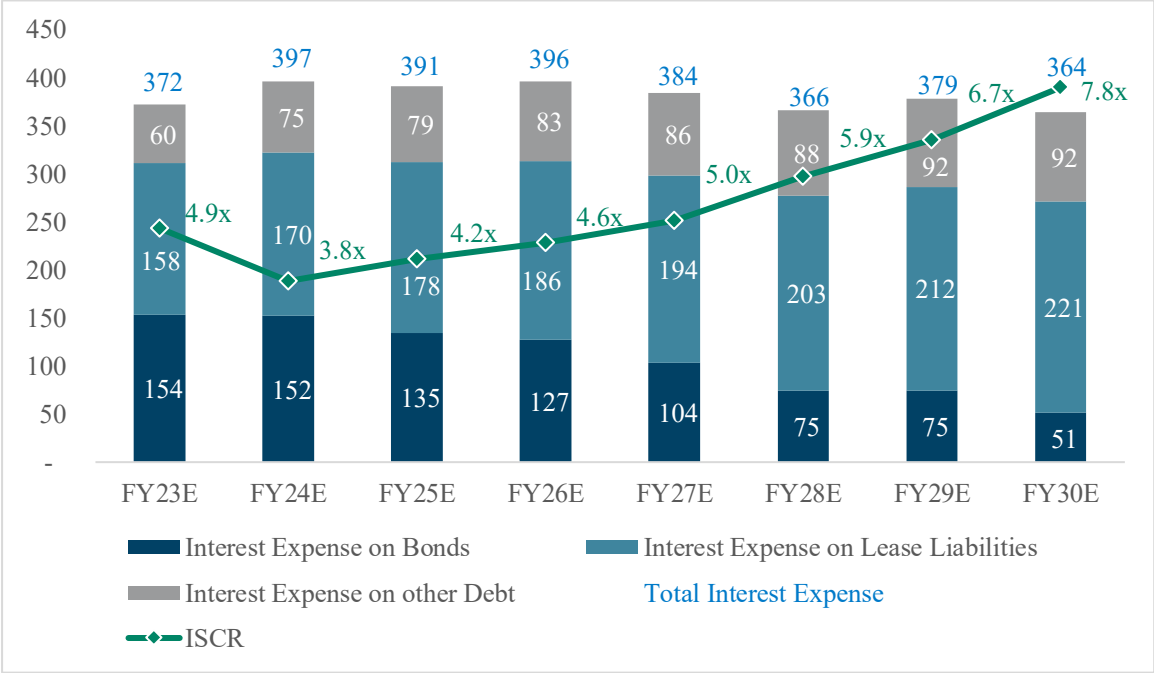
Figure 21 Net Debt Forecast (EURm)



Sources: FME Annual Report, Own Estimates

The interest expense forecast composites of fixed coupon payments on outstanding bonds, the historical interest on lease liabilities (3.2% effective interest rate), and the interest expense on other debt (bonded loans, receivables sales program, and refinancing debt) for which the (three month) EURIBOR projection + 2.5% spread is applied (European Central Bank, 2023). More information is provided in [Appendix 21](#).

Figure 22 Interest Expense and ISCR Forecast (EURm)



Sources: Own Estimates

### 7.6 Cash Flow

The Covid-19 pandemic negatively affected the company’s earnings and thereby NOPAT. Acquisitions and the constant WC demand further accelerated the effect (EUR -823m FCFF FY22A). However, as the company is undergoing major changes with its transformation program, focusing on one hand on improving profitability and limiting its spending on the other hand, FCFFs are estimated to rebound (EUR 1,351m in FY23E and EUR 1,152m in FY25E) and portraying an optimistic outlook. Despite these positive changes, FME’s management is unspecific about saving measures and areas of improvement, and macroeconomic tendencies (e.g., labour market shortage, inflation, etc.) could amplify the declining performance, putting the company at risk. Also, the Supreme Court decision could unravel an enormous downside regarding the payment contribution of private health insurances. For these reasons the company is assumed to need a strong safety net in the form of cash by FY25E.

However, the company can pay its shareholders a constantly improving dividend, as this is also an integral part of firm policy. In FY22A, the company raised its dividend again for the 25<sup>th</sup> time showcasing its vitality and shareholder return centricity. Moreover, the forecasted dividend payment also has a signalling effect on shareholders and can be seen as prove of the expected

payoff resulting from the transformation program. As the company has to repay EUR 1.88bn in FY26E and EUR 770m in FY27E, the dividend pay-out ratio is held constant over this period to avoid potential cash shortages. From thereon, the cash reserves are sufficient to increase dividends over the upcoming years.

Table 19 Cash Flow Forecast

EUR (m)	Explicit Forecast							
	2023	2024	2025	2026	2027	2028	2029	2030
<b>Opening Cash Balance</b>	1,273.8	1,391.4	1,678.4	1,817.3	648.9	703.8	1,677.4	1,631.8
(A) Operating Cash Flow	2,967.5	2,507.4	2,976.9	3,254.2	3,516.3	3,888.5	4,322.4	4,264.5
(B) Investing Cash Flow	(1,777.6)	(1,911.9)	(2,000.6)	(2,090.6)	(2,185.2)	(2,282.8)	(2,387.0)	(2,482.2)
<b>Free Cash Flow</b>	<b>1,351.6</b>	<b>775.4</b>	<b>1,152.4</b>	<b>1,342.9</b>	<b>1,501.8</b>	<b>1,763.0</b>	<b>2,102.0</b>	<b>1,938.1</b>
(C) Financing Cash Flow	(1,072.3)	(308.6)	(837.4)	(2,332.0)	(1,276.1)	(632.2)	(1,981.0)	(1,570.4)
<i>w/o Dividends to Owners of the Parent Comp.</i>	<i>(328.6)</i>	<i>(472.6)</i>	<i>(406.1)</i>	<i>(460.1)</i>	<i>(508.9)</i>	<i>(598.4)</i>	<i>(744.1)</i>	<i>(941.3)</i>
<i>Dividend Payout Ratio (Parent Comp.)</i>	<i>48.8%</i>	<i>53.8%</i>	<i>58.8%</i>	<i>58.8%</i>	<i>58.8%</i>	<i>63.8%</i>	<i>68.8%</i>	<i>73.8%</i>
<i>w/o Dividends to Non-Controlling Interest</i>	<i>(288.2)</i>	<i>(226.6)</i>	<i>(256.7)</i>	<i>(284.0)</i>	<i>(307.7)</i>	<i>(354.8)</i>	<i>(418.4)</i>	<i>(475.5)</i>
<i>100% of Profit attributable to Non-Controlling Interest is payed out in the Form of Dividends (FY23E onwards)</i>								
(A+B+C) Change in Cash	117.6	287.0	139.0	(1,168.5)	55.0	973.5	(45.6)	212.0
<b>Ending Cash Balance</b>	1,391.4	1,678.4	1,817.3	648.9	703.8	1,677.4	1,631.8	1,843.8

Sources: Own Estimates

A complete overview of the cash flow forecast is provided in [Appendix 22](#).

## 8. Valuation

In this final chapter, FME is valued intrinsically using the DCF method for FCFF and APV and market-valued with a CCA. The FCFE approach is not used because the company is forecasted to undergo significant changes in capital structure by deleveraging over the projection period, which would not be adequately covered, and on the operational side, FME is engaged in a transformation program, imposing the risk of high sensitivity of the equity value, and thus distorting the valuation. The CCA further highlights an overvaluation of earnings (median of 38.2x P/E 2022 multiples), strengthening the reliance on non-bottom-line-based valuation techniques.

A CTA is not used as the goal of this paper is to determine a share price for FME based on the company's stand-alone value and not the takeover value (which results from a CTA analysis).

The cash flows discount rate calculation, valuation results, and sensitivity analyses of results are explained and discussed against an equity report of Credit Suisse in the following sub-chapters.

### 8.1 WACC Derivation

For discounting the FCFF, the after-tax WACC is required as discount factor. The WACC is calculated for each forecasting year to account for shifts in risk-free rates and the evolution of FME's capital structure. The essential components, namely MV of equity, MV of debt, and cost of equity as well as cost of debt are calculated as follows.

#### 8.1.1 EV to Equity Bridge

The EV is computed in the first place for the MV of equity. This is done by multiplying the EBITDA with respective (forward) EV/EBITDA multiples retrieved from Refinitiv Eikon. Afterwards, relevant financial positions are either subtracted or added to build the bridge between EV and the MV of equity.

Table 20 Multiple-Based Calculation of EV

EUR (m)	Historicals			Explicit Forecast					
	2022A	2023	2024	2025	2026	2027	2028	2029	2030
EBITDA	3,135	3,629	3,459	3,774	4,090	4,377	4,795	5,342	5,319
EV/EBITDA Multiple (Current & Forward)	7.13x	8.40x	7.60x	6.83x	6.83x	6.83x	6.83x	6.83x	6.83x
<b>Enterprise Value</b>	<b>22,355</b>	<b>30,482</b>	<b>26,286</b>	<b>25,773</b>	<b>27,933</b>	<b>29,896</b>	<b>32,749</b>	<b>36,489</b>	<b>36,329</b>

Sources: Refinitiv Eikon, Own Illustration

The MV of debt is reached by gathering information on the company's outstanding bonds. The value is then added to the current borrowings (entailing the MV of one bond which is maturing in FY23E of EUR 637m), current leases, which are assumed to equal the MV, and non-current leases at carrying amount assumed to equal its MV. Other interest-bearing liabilities (EUR 3.7m) are also assumed to equal the MV as the annual report does not provide additional information and the value is considered non-materiality. For FY23E onwards, the BV for non-current borrowings, which accounts for the scheduled repayments, is plugged into Damodaran's bond pricing formula to reach the MV.

Table 21 MV of Debt Calculation

EUR (m)	Historicals		Explicit Forecast						
	2022A	2023	2024	2025	2026	2027	2028	2029	2030
Face Value (Non-Current Borrowings)		7,171	6,703	6,204	4,320	3,551	3,551	2,391	1,645
Interest Expense		(372)	(397)	(391)	(396)	(384)	(366)	(379)	(364)
Maturity		5.5	4.9	4.2	3.4	3.6	3.2	2.2	1.7
Cost of Debt		4.6%	4.5%	4.4%	4.3%	4.2%	4.1%	3.9%	3.8%
<b>Damodaran's Bond Formula:</b>		<b>7,380</b>	<b>7,127</b>	<b>6,656</b>	<b>4,982</b>	<b>4,316</b>	<b>4,196</b>	<b>2,977</b>	<b>2,123</b>
Current Borrowings	1,351	714	1,215	1,307	1,367	1,429	1,494	1,560	1,904
Current Leases	674	703	757	792	827	865	903	945	982
<b>Market Value Non-Current Borrowings</b>	<b>6,340</b>	<b>7,380</b>	<b>7,127</b>	<b>6,656</b>	<b>4,982</b>	<b>4,316</b>	<b>4,196</b>	<b>2,977</b>	<b>2,123</b>
Non-Current Lease Liabilities	4,005	4,181	4,497	4,705	4,917	5,140	5,369	5,614	5,838
Other Interest Bearing Liabilities	4	4	4	4	5	5	5	5	5
<b>Total Market Value of Debt</b>	<b>12,374</b>	<b>12,982</b>	<b>13,599</b>	<b>13,465</b>	<b>12,099</b>	<b>11,755</b>	<b>11,967</b>	<b>11,101</b>	<b>10,853</b>

Sources: FME Annual Report, Refinitiv Eikon, Damodaran 2012, Own Forecast

The cost of debt used for calculating the MV of debt is also utilized in the WACC computation and for discounting the ITS in the APV. It is the product of the YTM on outstanding bonds as of FY22A year-end and the implied cost of debt for private debt, weighted by the magnitude of contribution of each debt type (public vs. private) to total debt for every single projection year. The implied cost of private debt is the risk-free rate plus spread. The spread is based on the synthetic credit rating provided by Damodaran, according to the company's ISCR (Damodaran, 2023): With expected operating improvements and overall decreasing leverage over the forecast period, the ISCR is constantly improving from FY25E onwards, leading to a synthetic credit rating of AA in FY30E.

This approach is chosen as the composition of debt underlies significant changes over the projection period due to the mandatory bond repayments and the therewith linked increasing reliance on private debt as capital source.

Table 22 Cost of Debt

	Explicit Forecast							
	2023	2024	2025	2026	2027	2028	2029	2030
<b>Synthetic Credit Rating Approach</b>								
ISCR	4.9x	3.8x	4.2x	4.6x	5.0x	5.9x	6.7x	7.8x
Synthetic Rating Assignment (According to Damodaran)	A	A-	A-	A	A	A+	AA	AA
Spread	1.4%	1.6%	1.6%	1.4%	1.4%	1.2%	0.9%	0.9%
Risk-Free Rate	2.9%	2.5%	2.3%	2.4%	2.5%	2.6%	2.7%	2.7%
Implied Cost of Debt (Private Debt)	4.3%	4.1%	3.9%	3.8%	3.9%	3.8%	3.5%	3.6%
<b>Weighted Cost of Debt Calculation</b>								
Weight of Public Debt (Bonds)	56.9%	52.0%	48.6%	48.0%	35.5%	29.0%	29.7%	21.8%
Cost of Public Debt (YTM)	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
Weight of Private Debt	43.1%	48.0%	51.4%	52.0%	64.5%	71.0%	70.3%	78.2%
Implied Cost of Private Debt	4.3%	4.1%	3.9%	3.8%	3.9%	3.8%	3.5%	3.6%
<b>Weighted Cost of Debt</b>	<b>4.6%</b>	<b>4.5%</b>	<b>4.4%</b>	<b>4.3%</b>	<b>4.2%</b>	<b>4.1%</b>	<b>3.9%</b>	<b>3.8%</b>
Tax Rate	27%	27%	27%	27%	27%	27%	27%	27%

Sources: Refinitiv Eikon, Own Assumptions

For the MV of minorities, the median Price-to-Book (P/B) multiple of comparable companies is multiplied by the BV of minority interest on FME's balance sheet at year-end FY22A. The same multiple applies to the BV of investments in associated companies. The CCA yielded a median P/B value of 2.3x (the median is chosen due to an outlier for DaVita Inc. which would distort results).

Table 23 MV of Minority Interest and Investments in Associated Companies Derivation

**Minority Interest (Year-End 2022) (EURm)**

BV Minority Interest	1,460
Median P/B Multiple	2.3x
MV of Minority Interest	3,329

**Investments in Associated Companies (Year-End 2022) (EURm)**

BV Investments in Associated Companies	774
Median P/B Multiple	2.3x
MV of Investments in Associated Companies	1,765

Sources: FME Annual Report 2022, Refinitiv Eikon, Own Assumptions

Other surplus assets or, in this case, other surplus liabilities are comprised of FME's put option liabilities (EUR 1,469m FY22A), provisions for employee severance (EUR 149.1m FY22A), and variable payments outstanding for acquisitions (EUR 33.1m FY22A). Put option liabilities

are granted to owners and managers of companies and dialysis clinics (call options from their perspective), acquired by FME to set performance incentives and if exercised, settled in cash. These options are not timely limited, and according to FME's management represent therefore a long-term investment in the company. Due to this treatment and in order to apply the prudence principle in valuation, the total amount of these put option liabilities is considered in the EV to equity bridge. Consequently, the BV of options reflects the cash compensation if exercised and is therefore equivalent to the MV.

Pension liabilities used in the bridge are the difference between total pension obligations, the fair value of plan assets, and the amount of current obligations due. FME's pension liabilities are EUR 514m at year-end FY22A. Hence the liabilities are discounted, the amount reflects the MV.

After subtracting the MV of net debt, pension liabilities, and minority interest and adding the MV of investments in associated companies and other surplus assets (or, in this case, deduct other surplus liabilities) from the priorly calculated EV, the MV of equity for each year is reached. The firm's capital structure is then derived for the final step of calculating the yearly WACC.

Table 24 Determining the MV of Equity

EUR (m)	Historicals				Explicit Forecast					
	2022A	2023	2024	2025	2026	2027	2028	2029	2030	
Enterprise Value	22,355	30,482	26,286	25,773	27,933	29,896	32,749	36,489	36,329	
(-) Market Value of Debt	(12,374)	(12,982)	(13,599)	(13,465)	(12,099)	(11,755)	(11,967)	(11,101)	(10,853)	
(+) Excess Cash	1,274	1,391	1,678	1,817	649	704	1,677	1,632	1,844	
(+) Investments in Associated Companies	1,765	1,765	1,765	1,765	1,765	1,765	1,765	1,765	1,765	
(+) Other Surplus Assets	(1,651)	(1,639)	(1,627)	(1,615)	(1,603)	(1,591)	(1,579)	(1,567)	(1,555)	
(-) Pensions	(514)	(514)	(514)	(514)	(514)	(514)	(514)	(514)	(514)	
(-) Minorities	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	
<b>Market Value of Equity</b>	<b>7,525</b>	<b>15,174</b>	<b>10,659</b>	<b>10,433</b>	<b>12,801</b>	<b>15,176</b>	<b>18,802</b>	<b>23,374</b>	<b>23,687</b>	

	Historicals				Explicit Forecast					
	2022A	2023	2024	2025	2026	2027	2028	2029	2030	
D/E	1.48	0.76	1.12	1.12	0.89	0.73	0.55	0.41	0.38	
D/(D+E)	0.60	0.43	0.53	0.53	0.47	0.42	0.35	0.29	0.28	
E/(D+E)	0.40	0.57	0.47	0.47	0.53	0.58	0.65	0.71	0.72	

Sources: FME Annual Report, Refinitiv Eikon, Damodaran 2012, Own Calculations

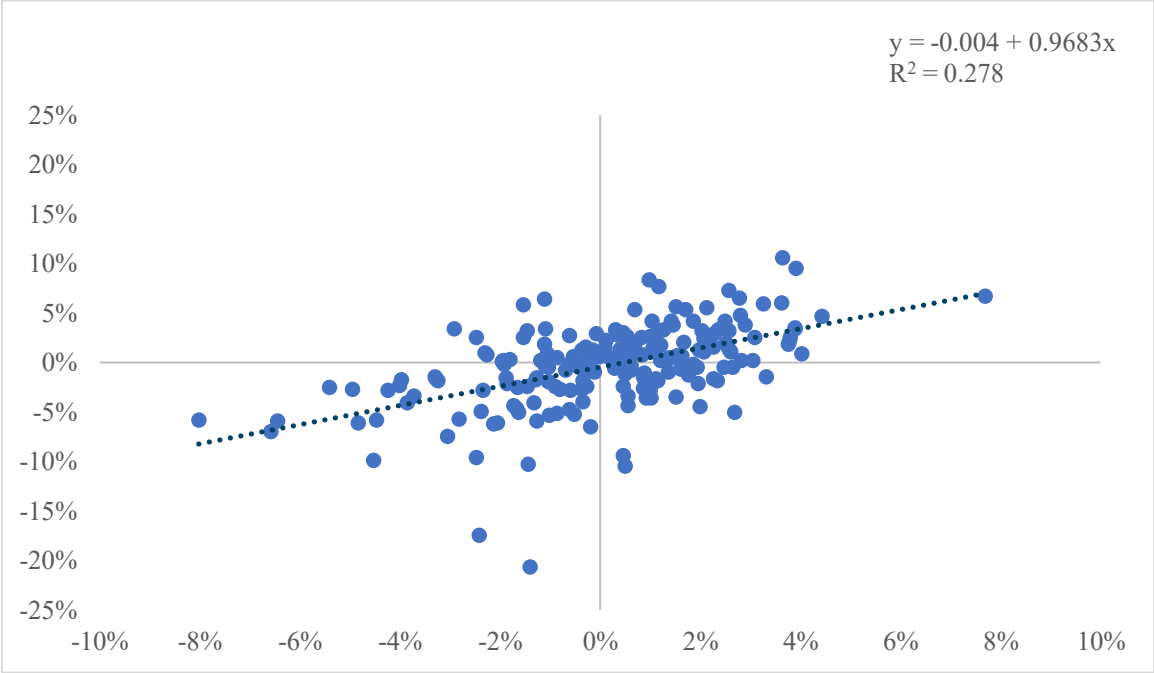
### 8.1.2 Cost of Equity

The cost of equity is calculated using the priorly explained CAPM formula. To have a risk-free rate not only capturing the current interest rate environment but incorporating the anticipated development over time, Svensson's formula is filled with forward yields ("instantaneous interest rates for future periods") (European Central Bank, 2023). These forward yields are derived from a zero-coupon yield curve based on existing YTM's (for zero-coupon bonds) on hypothetical AAA-rated zero-coupon bonds (European Central Bank, 2023). The corresponding risk-free rate is then computed for each projection year. The forward yields represent high uncertainty in the short-term as the current European economic environment faces several challenges (e.g., energy and raw material price effects, political tensions). However, from 2025 onwards, the risk-free rate increases show a normalized pattern and are coherent with the increase in maturity of the underlying bonds.

The company's beta is the regression slope of FMEG.DE's historical weekly return on the STOXX Europe 600 Healthcare index and FMS.N (the American ADRs in USD) on the Dow Jones Industrial (USD) index from 01.01.2019- 31.12.2022 to properly reflect the healthcare industry tendencies, the company's geographical core market as well as FME's shareholder structure with the majority of shareholders coming from Germany and broader Europe and the United States. Additionally, the regression on US values in USD considers local currency effects, capturing respective ramifications on the company's performance with most of its revenues generated in the US. Furthermore, the "home bias" of institutional investors preferring domestic equities over cross-border stocks is minimized in this methodology. Finally, both regression slopes have been assigned a weighting based on the shareholder structure (see [Appendix 24](#)).

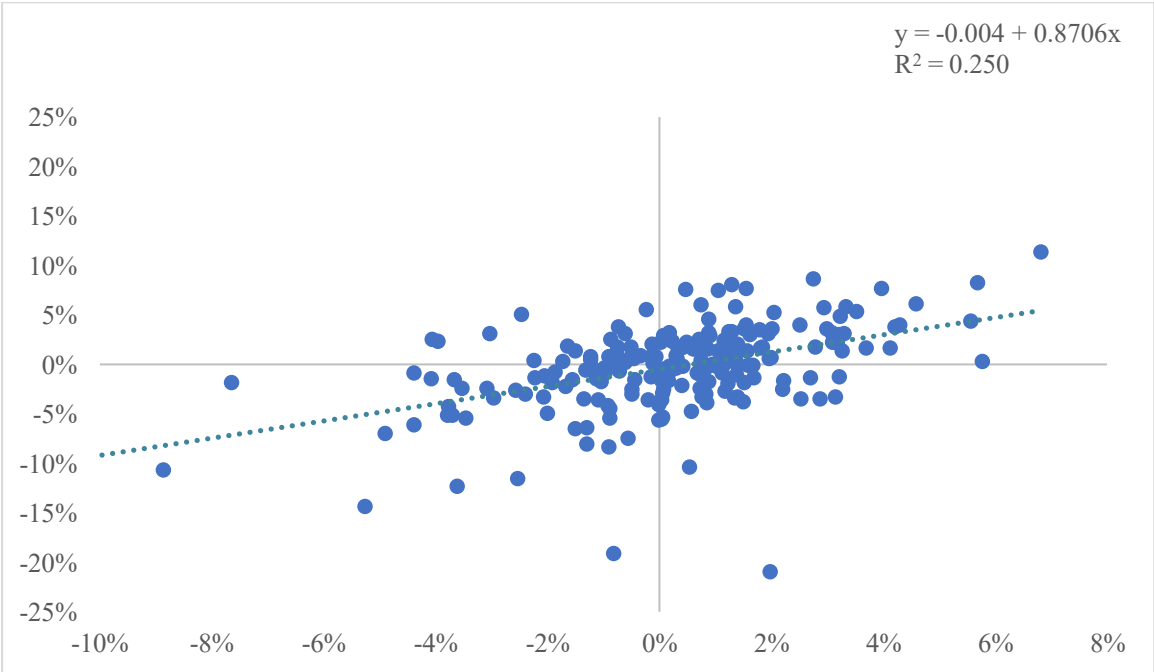
The final beta is 0.92 for 2022, which at first glance seems high but can be explained through the company's high exposure to systemic risks (in past years), such as overall political risks, governmental funding and spending, the Covid-19 crisis, inflation, the interest rates environment, and labour market dynamics. The levered raw beta is then adjusted with Blume's formula for the forecasting year.

Figure 23 Beta Regression: FMEG.DE on STOXX Europe 600 Health Care (EUR)



Sources: Refinitiv Eikon, Own Illustration

Figure 24 Beta Regression: FMS.N on Dow Jones Industrial (USD)



Sources: Refinitiv Eikon, Own Illustration

For the APV method, the beta is unlevered using each year’s capital structure calculated in the equity bridge as the company’s financing structure changes significantly over the forecasting period. Again, the unlevered beta is then adjusted with Blume’s formula.

The company’s beta is used instead of the beta of peers as the comparability of FME among other companies is limited. This is because the only other dialysis services provider with a similar size is DaVita, mainly operating in the US and not like FME globally. Also, there is no pure direct player with a vertical integration approach, only dialysis product companies next to DaVita, primarily rooted in their domestic markets. Therefore, this core pillar of FME would not be as precisely reflected with the peer betas as by taking the company’s beta.

As for the market risk premium, data from Damodaran’s computations by country was chosen (Damodaran, 2023). The market risk premium for regions is calculated by weighting the market risk premium for each country within the region based on its contribution to the total GDP of the region. Afterwards, the weighted market risk premia for all countries in that region are aggregated.

The market risk premium by country/ region (as demonstrated below) is then weighted by the ownership share to reflect the shareholder structure. As a result, the overall weighted market risk premium comes to 6.5%. Hence no other information is available, it is kept constant over the projection period.

*Table 25 Market Risk Premium*

Country	Market Risk Premium	Weight (FME's Ownership)
United States	5.9%	40%
Germany	5.9%	35%
United Kingdom	7.0%	5%
Canada	5.9%	3%
France	6.8%	2%
Rest of Europe	8.8%	5%
Rest of World	9.2%	9%
<b>Weighted Market Risk Premium</b>		<b>6.5%</b>

*Sources: Damodaran 2023, Own Calculations*

The before-described components are plugged into the CAPM formula to get the levered cost of equity for the WACC of the FCFF and the unlevered cost of equity for the APV DCF.

Table 26 Levered and Unlevered Cost of Equity

	Historicals	Explicit Forecast							
	2022A	2023	2024	2025	2026	2027	2028	2029	2030
Risk Free Rate	1.6%	2.9%	2.5%	2.3%	2.4%	2.5%	2.6%	2.7%	2.7%
Levered Beta (Bloome Adj. 2023 going forward)	0.92	0.95	0.97	0.98	0.98	0.99	0.99	1.00	1.00
Market Risk Premium	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%
<b>Levered Cost of Equity</b>		<b>9.0%</b>	<b>8.7%</b>	<b>8.6%</b>	<b>8.7%</b>	<b>8.9%</b>	<b>9.0%</b>	<b>9.1%</b>	<b>9.2%</b>

	Historicals	Explicit Forecast							
	2022A	2023	2024	2025	2026	2027	2028	2029	2030
Raw (Levered) Beta	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
D/E	1.48	0.76	1.12	1.12	0.89	0.73	0.55	0.41	0.38
Tax Rate	27%	27%	27%	27%	27%	27%	27%	27%	27%
Unlevered Beta	0.44	0.59	0.51	0.51	0.56	0.60	0.66	0.71	0.72
<b>Bloome Adjusted Beta</b>		<b>0.73</b>	<b>0.67</b>	<b>0.67</b>	<b>0.70</b>	<b>0.73</b>	<b>0.77</b>	<b>0.81</b>	<b>0.81</b>
<b>Unlevered Cost of Equity</b>		<b>7.5%</b>	<b>6.8%</b>	<b>6.7%</b>	<b>6.9%</b>	<b>7.2%</b>	<b>7.6%</b>	<b>7.9%</b>	<b>8.0%</b>

Source: Own Calculations

### 8.1.3 WACC Results

With all the required components on hand, the (after-tax) WACC is ultimately computed for each year to discount the FCFFs.

Table 27 WACC Computation

	Historicals	Explicit Forecast							
	2022A	2023	2024	2025	2026	2027	2028	2029	2030
D/(D+E)	0.60	0.43	0.53	0.53	0.47	0.42	0.35	0.29	0.28
E/(D+E)	0.40	0.57	0.47	0.47	0.53	0.58	0.65	0.71	0.72
<b>WACC</b>		<b>6.5%</b>	<b>5.8%</b>	<b>5.8%</b>	<b>6.1%</b>	<b>6.4%</b>	<b>6.9%</b>	<b>7.3%</b>	<b>7.4%</b>

Source: Own Calculations

## 8.2 Terminal Growth

In the case of the terminal growth rate, the company's estimates are analysed and evaluated against own assumptions and information on the company, the underlying market characteristics, and the economic outlook.

First, FME's management provides its own perpetual growth rate by regional divisions or also referred to as Cost Generating Units (CGUs), as part of its annual impairment testing.

Table 28 Management's Forecast Assumptions

FME's Management Assumptions	North America	EMEA	APAC	Latin America
Average Revenue Growth Forecast (10 years)	Mid Single-Digit	Mid Single-Digit	Mid Single-Digit	Mid Single-Digit
Average EBIT Growth Forecast (10 years)	High Single-Digit	High Single-Digit	Mid Single-Digit	Low Double-Digit
Perpetual Growth Rate	1.00%	1.00%	1.00%	1.60%
Forecast Rationales:	<ul style="list-style-type: none"> <li>▪ <b>Past Budget Planning compared to actual Results</b></li> <li>▪ Identified <b>Growth Drivers and Areas of Profitability Improvement</b> (e.g., constant rising demand for medical services and products, non-cyclical business model)</li> <li>▪ <b>Incorporated Risks:</b> Governmental Renumeration Rise below Expectations, higher Cost Incurrences, Prevalence of Labour Shortage especially in the US, other Country-Specific Risks (e.g. Regulation, Allowance for privately organized Companies to conduct medical Services)</li> </ul>			

Source: FME Annual Report 2022

Regarding management's projections, it is remarkable that the CGUs are expected to grow top-line from low to mid single-digit in every region and improve margins by mid and high single-digit to low double-digit while anticipating a perpetual growth rate of ~1%. This information set into context leads to two main conclusions. First, management either overestimates the operational growth capabilities in the short-term or given that the operational assumptions turn out to be valid, they are expected not to be sustainable in the long-term.

To come up with a suitable perpetual growth rate, additional macro- & micro economic factors need to be incorporated.

Table 29 Indicative Macro- & Micro-Economic Factor Assessment

Indicative Assessment	Outlook	Rationale
Market Growth Potential	<i>Moderate/ High</i>	<ul style="list-style-type: none"> <li>Stable Growth in developed Countries, high Potential in emerging Markets over the mid- to long-term</li> </ul>
Exposure to Economic Cycle	<i>Low</i>	<ul style="list-style-type: none"> <li>Medical Services and Devices are Crisis resilient and are required on a continuous Basis</li> </ul>
Exposure to Macroeconomic Factors	<i>High</i>	<ul style="list-style-type: none"> <li>FME has high Exposure to Inflation, Labour Market, Geopolitical Tensions, and Interest Rate Environment</li> <li>Highly sensitive to Changes in Regulation</li> </ul>
Recurring Nature of Business	<i>High</i>	<ul style="list-style-type: none"> <li>Dialysis Treatments are highly recurring</li> <li>Customers tend to be sticky</li> </ul>
Competitive Advantage	<i>Moderate/ High</i>	<ul style="list-style-type: none"> <li>FME as a large, multi-national pure Player is the Market Leader in Dialysis Services and Products</li> <li>Longevity of Competitive Advantage questionable</li> </ul>
Market Share Evolution	<i>Decreasing/ Constant</i>	<ul style="list-style-type: none"> <li>Transformation Program does not include Plans for additional Market Share Capture (in the short-term)</li> </ul>
Product & Service Differentiation	<i>Moderate</i>	<ul style="list-style-type: none"> <li>Product and for FME also Service Differentiation is highly dependent on R&amp;D</li> <li>Rationalizing efforts can hinder furth</li> </ul>
Barriers to Entry	<i>High</i>	<ul style="list-style-type: none"> <li>Dialysis Business is highly Capital intensive (e.g., Set-Up of Dialysis Clinic or Production Facility) and Capital binding (due to Customer Base)</li> <li>Regulatory Environment is also a high Entry Barrier</li> </ul>
Control over Price Evolution	<i>Moderate/ Low</i>	<ul style="list-style-type: none"> <li>Strong Dependency on Statuory Renumeration and Private Health Insurances</li> </ul>
Client Concentration	<i>Moderate</i>	<ul style="list-style-type: none"> <li>CMS accounts for 26% of Group Revenues</li> <li>Concentration has decreased historically</li> </ul>
Value Creation Potential/ Financial Outlook	<i>Moderate</i>	<ul style="list-style-type: none"> <li>Top Line Growth through Product Advancements (e.g. Home HD and PD) paired with Margin Improvement Potential as shift from In-Clinic to remote Dialysis Services is observable, projected, (and desired by US-Government)</li> <li>Distinctive Opportunities in the Field of Big Data</li> </ul>
Indicative Management Quality Assessment	<i>Moderate</i>	<ul style="list-style-type: none"> <li>Lack of precise Value Enhancement and Cost Saving Measures (future Strategy not clear)</li> </ul>
Reporting Sytem	<i>Good</i>	<ul style="list-style-type: none"> <li>Change in Operating Model is expected to be beneficial (e.g., increase Efficiency and simplify Issue Tackling)</li> </ul>

Source: Own Assessment

To put it in a nutshell, FME can be considered as a healthcare infrastructure like asset, as the treatment of patients is highly recurring and long-term oriented, the business is relatively stable (despite Covid-19), the company holds a distinctive market position as an integral dialysis provider in the US, and structural changes fundamentally drive the underlying market. To

quantify the recognitions, the perpetuity growth rate is assumed to equal the long-term risk-free rate of 2%. This rate is chosen as it proxies economy's nominal growth rate, incorporates expected inflation and expected real interest rates and adequately reflects the company and business characteristics.

### 8.3 Valuation Results FCFF

Drivers of the FCFF over the projection period are mainly improving operating margins, limited spending in terms of CapEx as part of the FME25 program, and marginal WC optimization. For CapEx and D&A in the penultimate year of forecast (FY30E), the going concern principle is applied, setting the spending and amortization equal, additionally raising the FCFF.

Table 30 FCFF DCF Results

EUR (m)	Explicit Forecast									TV
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>NOPAT</b>		<b>1,328</b>	<b>1,097</b>	<b>1,215</b>	<b>1,329</b>	<b>1,416</b>	<b>1,594</b>	<b>1,860</b>	<b>2,081</b>	
(+) D&A		1,818	1,963	2,117	2,278	2,446	2,622	2,806	2,482	
(+/-) Changes in NCWC		(17)	(373)	(179)	(173)	(176)	(170)	(177)	(143)	
(-) CapEx		(1,778)	(1,912)	(2,001)	(2,091)	(2,185)	(2,283)	(2,387)	(2,482)	
<b>FCFF</b>		<b>1,352</b>	<b>775</b>	<b>1,152</b>	<b>1,343</b>	<b>1,502</b>	<b>1,763</b>	<b>2,102</b>	<b>1,938</b>	<b>35,533</b>
Discount Rate (WACC)		6.5%	5.8%	5.8%	6.1%	6.4%	6.9%	7.3%	7.4%	
Discount Factor (WACC)		0.94	0.89	0.85	0.79	0.73	0.67	0.61	0.56	
Present Value FCFF		1,269	692	974	1,060	1,100	1,183	1,285	1,094	
<b>PV FCFF</b>		<b>8,657</b>								
<b>PV of TV</b>		<b>20,065</b>								
<b>Enterprise Value</b>		<b>28,722</b>								

Sources: Own Estimates

## 8.4 Valuation Results APV

For the APV approach, the unlevered cash flows are discounted with the unlevered cost of equity, expected distress costs are deducted, and the combined value is, in the next step, added to the PV of the ITS. With projected deleveraging over the forecast period, the APV provides the benefit of capturing valuation drivers in terms of value coming from operations and the value resulting from net debt, compared to the FCFF.

The expected distress cost is calculated with the probability of default, based on the synthetic rating of A- for FME's ISCR in FY22A of 3.6x and Damodaran's data (Damodaran, 2023). Therefore, the probability of default equals 1.6% and the cost of bankruptcy is assumed to equal 28%. The magnitude of bankruptcy cost is chosen to apply the prudence principle.

Table 31 APV Results

EUR (m)	Explicit Forecast									TV
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
FCFF		1,352	775	1,152	1,343	1,502	1,763	2,102	1,938	32,243
Discount Rate (Unlevered Cost of Equity)		7.5%	6.8%	6.7%	6.9%	7.2%	7.6%	7.9%	8.0%	
Discount Factor (Unlevered Cost of Equity)		0.93	0.88	0.82	0.77	0.71	0.65	0.59	0.54	
Present Value FCFF		1,257	680	950	1,028	1,060	1,139	1,238	1,050	
<b>PV FCFF</b>		<b>8,401</b>								
<b>PV of TV</b>		<b>17,470</b>								
<b>Unlevered Value</b>		<b>25,871</b>								
Probability of Default		1.60%								
Bankruptcy Cost (3% Direct Cost + 25% Indirect Cost)		28%								
<b>Total Value Bankruptcy Cost</b>		<b>116</b>								
Net Debt		11,942	11,381	11,497	11,195	10,788	10,285	9,645	8,884	
Theoretical Yearly Tax Shield		145	142	136	132	125	118	109	96	4,955
Discount Rate (Cost of Debt)		4.6%	4.6%	4.5%	4.4%	4.3%	4.2%	4.1%	3.9%	
Discount Factor (Cost of Debt)		0.96	0.91	0.88	0.84	0.81	0.78	0.76	0.74	
Present Value of Tax Shield		139	130	119	111	102	92	82	71	
<b>PV of ITS</b>		<b>846</b>								
<b>PV of ITS TV</b>		<b>3,652</b>								
<b>Value of Tax Shield</b>		<b>4,498</b>								
<b>Enterprise Value</b>		<b>30,253</b>								

Sources: Damodaran 2023, Own Estimates

## 8.5 Valuation Results Summary DCF

The DCF results for the FCFF in a share price of EUR 37.43 and for the APV at EUR 40.63 with management's perpetual growth rate of 1%. Using the own perpetual growth rate of 2%, the share price is EUR 47.35 and EUR 52.57, implying a potential upside of 55% and 72%, respectively (on the closing share price as of 31.12.2022, EUR 30.75).

Table 32 DCF Valuation Results with 1% and 2% Terminal Growth Rates

Summary	FCFF (1% TG)	APV (1% TG)	FCFF (2% TG)	APV (2% TG)
<b>Enterprise Value</b>	<b>25,811</b>	<b>26,752</b>	<b>28,722</b>	<b>30,253</b>
(-) Net Debt	(11,100)	(11,100)	(11,100)	(11,100)
(+) Investments in Associated Companies	1,765	1,765	1,765	1,765
(+) Other Surplus Assets	(1,651)	(1,651)	(1,651)	(1,651)
(-) Pension Liabilities	(514)	(514)	(514)	(514)
(-) Minorities	(3,329)	(3,329)	(3,329)	(3,329)
<b>Equity Value</b>	<b>10,981</b>	<b>11,922</b>	<b>13,892</b>	<b>15,424</b>
Number of Shares Outstanding (NOSHm)	293.4	293.4	293.4	293.4
<b>Equity Value per Share (€)</b>	<b>37.43 €</b>	<b>40.63 €</b>	<b>47.35 €</b>	<b>52.57 €</b>
<i>Implied EV/ EBITDA 2022 Multiple</i>	<i>8.2x</i>	<i>8.5x</i>	<i>9.2x</i>	<i>9.6x</i>
<b>Actual Share Price (31st of December, 2022)</b>	<b>30.57 €</b>	<b>30.57</b>	<b>30.57</b>	<b>30.57</b>
<i>Upside/ Downside</i>	<i>22%</i>	<i>33%</i>	<i>55%</i>	<i>72%</i>
<b>Actual Share Price (31st of March, 2023)</b>	<b>39.10 €</b>	<b>39.10 €</b>	<b>39.10 €</b>	<b>39.10 €</b>
<i>Upside/ Downside</i>	<i>-4%</i>	<i>4%</i>	<i>21%</i>	<i>34%</i>
<b>4- Week Moving Average (31st of December, 2022 - 31st of March, 2023)</b>	<b>35.58 €</b>	<b>35.58 €</b>	<b>35.58 €</b>	<b>35.58 €</b>
<i>Upside/ Downside</i>	<i>5%</i>	<i>14%</i>	<i>33%</i>	<i>48%</i>

Sources: FME Annual Report, Own Estimates

The results demonstrate a high sensitivity of the share price to the terminal growth rate. Therefore, the next chapter outlines the share price under different perpetuity growth rates.

Potential reasons for the divergence of the actual share price and the share price derived from the intrinsic valuation could be that shareholders doubt the effectiveness and therewith related anticipated benefits of the transformation program as the operating margins in FY22A have yet to show proof of improvement. It could be further due to management's unclear path for the following years and macroeconomic headwinds, increasing the likelihood of failure for FME25 and putting more pressure on the general vitality of the firm.

## 8.6 Sensitivity Analysis

The following sensitivity analyses display the share price valuation of FME for the FCFF and APV method, with the terminal growth rate and WACC, or unlevered cost of equity as parameters for the final forecast year FY30E to validate and back test the yielded results. Therefore, the terminal growth rate of 2% is utilized.

For the FCFF, the results underline a share price in the range between EUR 36.75 and EUR 61.41.

Table 33 Sensitivity Analysis FCFF

		Perpetual Growth Rate								
		1.0%	1.2%	1.5%	1.7%	2.0%	2.2%	2.5%	2.7%	3.0%
Wacc	5%	76.90 €	82.68 €	89.20 €	96.60 €	105.07 €	114.86 €	126.31 €	139.88 €	156.20 €
	6%	63.66 €	68.14 €	73.12 €	78.69 €	84.97 €	92.09 €	100.25 €	109.67 €	120.70 €
	6%	52.95 €	56.49 €	60.39 €	64.70 €	69.50 €	74.87 €	80.91 €	87.77 €	95.62 €
	7%	44.13 €	46.98 €	50.09 €	53.50 €	57.26 €	61.41 €	66.03 €	71.20 €	77.02 €
	7%	36.75 €	39.08 €	41.61 €	44.35 €	47.35 €	50.63 €	54.25 €	58.25 €	62.70 €
	8%	30.51 €	32.43 €	34.51 €	36.75 €	39.19 €	41.83 €	44.72 €	47.88 €	51.37 €
	8%	25.16 €	26.77 €	28.50 €	30.36 €	32.36 €	34.52 €	36.86 €	39.41 €	42.20 €
	9%	20.54 €	21.90 €	23.35 €	24.91 €	26.57 €	28.36 €	30.29 €	32.38 €	34.64 €
	9%	16.52 €	17.68 €	18.91 €	20.22 €	21.62 €	23.12 €	24.73 €	26.45 €	28.31 €

Source: Own Calculations

The sensitivity analysis for the APV yields a share price in the range of EUR 42.53 and EUR 65.56, thereby marking the upside for the FME's stock.

Table 34 Sensitivity Analysis APV

		Perpetual Growth Rate								
		1.0%	1.2%	1.5%	1.7%	2.0%	2.2%	2.5%	2.7%	3.0%
Cost of Equity Unlev.	6%	72.21 €	77.31 €	83.04 €	89.56 €	97.03 €	105.74 €	116.06 €	128.63 €	144.58 €
	6%	61.79 €	65.99 €	70.69 €	75.99 €	82.06 €	89.08 €	97.40 €	107.54 €	120.50 €
	7%	53.19 €	56.72 €	60.66 €	65.11 €	70.17 €	76.04 €	82.99 €	91.52 €	102.55 €
	7%	45.98 €	49.01 €	52.39 €	56.19 €	60.53 €	65.56 €	71.55 €	78.96 €	88.69 €
	8%	39.88 €	42.52 €	45.46 €	48.78 €	52.57 €	56.99 €	62.28 €	68.88 €	77.68 €
	8%	34.64 €	36.98 €	39.59 €	42.53 €	45.90 €	49.85 €	54.62 €	60.63 €	68.76 €
	9%	30.12 €	32.21 €	34.55 €	37.20 €	40.25 €	43.84 €	48.20 €	53.77 €	61.39 €
	9%	26.17 €	28.07 €	30.20 €	32.61 €	35.40 €	38.71 €	42.76 €	47.98 €	55.21 €
	10%	22.71 €	24.45 €	26.40 €	28.62 €	31.21 €	34.29 €	38.10 €	43.04 €	49.97 €

Source: Own Calculations

## 8.7 Valuation Results CCA

The peers for the CCA are selected based on the underlying business model, top-line and margin improvement outlook, and CCC. For the business model, the peers are classified as dialysis services or dialysis product providers. DaVita Inc. is the only service provider next to FME with a comparable size in terms of number of clinics (3,074), number of patients treated (245,000), and geographic focus (81% of patients being treated in the US). It also implies common risks shared among the peer and the target company (FME).

On the product side, the most comparable companies are Baxter International in the US, Nipro in Japan, and JMS in Japan. The dialysis product peers are chosen to reflect FME's global product footprint as products for the US, EMEA, and APAC markets differ in prices with APAC focusing on lower-priced dialysis machines and consumables. Baxter is depicted as covering not only the US, but also Europe. Baxter has a projected sales CAGR 3.2%, a 2022A EBITDA margin of 21%, and a CCC of 118. Nipro has a projected sales growth of 4.3% till 2025E, a 2022A EBITDA margin of 12% and an expected margin outlook of +1.4%.

For JMS, fewer analyst consensus information was given. Its EBITDA margin is 6.7% in 2022A.

Table 35 CCA Results

Name	Country	Currency	Category	Mkt. Cap (m)	EV (m)	Sales CAGR	EBITDA Margin	EBITDA Margin Outlook
						22' - 25'	2022	22' - 25'
DaVita Inc.	USA	USD	Dialysis Services	8,787	20,920	2.7%	17.6%	1.8%
Baxter International Inc.	USA	USD	Dialysis Products	21,661	36,871	3.2%	21.0%	3.3%
Nipro Corp.	JPN	JPY	Dialysis Products	174,889	769,387	4.3%	12.2%	1.4%
JMS Corp.	JPN	JPY	Dialysis Products	13,331	25,135	-	6.7%	-

Name	EV/ Sales				EV/ EBITDA				P/E			
	2022A	2023E	2024E	2025E	2022A	2023E	2024E	2025E	2022A	2023E	2024E	2025E
DaVita Inc.	1.8x	1.8x	1.7x	1.7x	10.2x	9.5x	9.1x	8.6x	15.7x	14.5x	13.0x	11.7x
Baxter International Inc.	2.4x	2.4x	2.3x	2.2x	11.6x	10.1x	10.3x	9.1x	n/a	29.5x	18.4x	14.8x
Nipro Corp.	1.4x	1.3x	1.3x	1.2x	11.6x	10.3x	9.7x	9.2x	38.2x	12.8x	9.6x	11.1x
JMS Corp.	0.4x	-	-	-	5.85x	-	-	-	51.1x	-	-	-
<b>Average</b>	<b>1.5x</b>	<b>1.4x</b>	<b>1.3x</b>	<b>1.3x</b>	<b>9.8x</b>	<b>7.5x</b>	<b>7.3x</b>	<b>6.7x</b>	<b>35.0x</b>	<b>14.2x</b>	<b>10.3x</b>	<b>9.4x</b>
<b>Median</b>	<b>1.6x</b>	<b>1.5x</b>	<b>1.5x</b>	<b>1.5x</b>	<b>10.9x</b>	<b>9.8x</b>	<b>9.4x</b>	<b>8.8x</b>	<b>38.2x</b>	<b>13.6x</b>	<b>11.3x</b>	<b>11.4x</b>

Chosen Case:

Fresenius Medical Care												
EV (EURm)	31,164	31,282	32,546	33,132	34,221	35,488	32,458	33,377	49,024	31,224	26,001	27,231
(-) Net Debt	(11,100)	(11,591)	(11,921)	(11,647)	(11,100)	(11,591)	(11,921)	(11,647)	(11,100)	(11,591)	(11,921)	(11,647)
(+) Inv. in Assoc. Comp.	1,765	1,765	1,765	1,765	1,765	1,765	1,765	1,765	1,765	1,765	1,765	1,765
(+) Other Surplus Assets	(1,651)	(1,639)	(1,627)	(1,615)	(1,651)	(1,639)	(1,627)	(1,615)	(1,651)	(1,639)	(1,627)	(1,615)
(-) Pension Liabilities	(514)	(514)	(514)	(514)	(514)	(514)	(514)	(514)	(514)	(514)	(514)	(514)
(-) Minorities	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)	(3,329)
<b>Equity Value</b>	<b>16,335</b>	<b>15,973</b>	<b>16,920</b>	<b>17,792</b>	<b>19,392</b>	<b>20,179</b>	<b>16,831</b>	<b>18,036</b>	<b>34,195</b>	<b>15,915</b>	<b>10,375</b>	<b>11,890</b>

Implied Share Price												
NOSH	293	293	293	293	293	293	293	293	293	293	293	293
<b>Share Price</b>	<b>55.70 €</b>	<b>54.47 €</b>	<b>57.70 €</b>	<b>60.67 €</b>	<b>66.13 €</b>	<b>68.81 €</b>	<b>57.40 €</b>	<b>61.50 €</b>	<b>116.61 €</b>	<b>54.27 €</b>	<b>35.38 €</b>	<b>40.55 €</b>

Act. Share Price (31.12.2022)	30.57 €	30.57 €
Upside/ Downside	82%	116%

Act. Share Price (31.03.2023)	39.10 €	39.10 €
Upside/ Downside	42%	69%

4- Week Moving Average (31.12.2022 - 31.03.2023)	35.58 €	35.58 €
Upside/ Downside	57%	86%

Sources: Refinitiv Eikon, FME Annual Report, Own Illustration

In terms of multiples, investors overvalue earnings and are rather profitability than top-line focused. Furthermore, the declining forward multiples (e.g., EV/Sales or P/E) showcase a normalization in valuation and imply market scepticism about the estimated improvement in sales and margins. Also, investors anticipate with forward multiples the current uncertainty in the macro environment, perceiving higher risks associated with the companies' prospects, demanding therefore a higher risk premium.

Applying the CCA multiples to FME's historical financials yields share prices of EUR 55.70 to EUR 66.13 (excluding the P/E multiples in 2022A) as of 2022A. For the future, the implied share price remains mostly in this range.

## 8.8 Comparison to the Credit Suisse Equity Report

Credit Suisse (a Suisse Corporate and Investment Bank) or in particular Christoph Gretler (the equity research analyst) derives on the 14<sup>th</sup> of March 2023 with its FCFF DCF a share price of EUR 35 for FME and therewith a neutral recommendation. The bank projects cash flows for 10 years (FY32E inclusive), using the terminal growth rate of 1%, issued by FME's management and a flat WACC of 8%.

Table 36 Summary Credit Suisse Valuation

EUR (m)	Explicit Forecast											TV
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
NOPAT		1,127	1,266	1,511	1,829	2,021	2,223	2,387	2,562	2,737	2,923	
(+) D&A		1,829	1,926	2,008	2,095	2,183	2,275	2,370	2,468	2,570	2,675	
(-) Change in WC		(209)	(167)	(190)	(184)	(179)	(179)	(180)	(190)	(199)	(210)	
(-) CapEx		(1,776)	(2,052)	(2,252)	(2,359)	(2,463)	(2,570)	(2,679)	(2,793)	(2,912)	(3,038)	
<b>FCFF</b>		<b>971</b>	<b>973</b>	<b>1,077</b>	<b>1,381</b>	<b>1,562</b>	<b>1,749</b>	<b>1,898</b>	<b>2,047</b>	<b>2,196</b>	<b>2,350</b>	<b>33,950</b>
Discount Rate (WACC)		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Discount Factor		0.94	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.44
PV FCFF		913	837	851	1,008	1,047	1,084	1,082	1,064	1,054	1,034	
PV TV		15,005										
Enterprise Value		24,976										
Net Debt, Incl. Leasing (End 2022A)		(11,939)										
Long Term Pensions (End 2022A)		(514)										
Minority Interest Capitalized		(2,321)										
Equity Value		10,202										
Equity Value per Share		35 €										

Source: Credit Suisse 2023

The Thesis FCFF results are compared to the Credit Suisse report since it is the same methodology and enables the identification of differences in assumptions.

Table 37 Comparison to Credit Suisse Assumptions

Comparison to Credit Suisse Assumptions	Credit Suisse	Thesis	Additional Comments
Top Line Growth	5.6% CAGR (FY22A – FY32E)	4.8% CAGR (FY22A – FY30E)	<ul style="list-style-type: none"> <li>▪ Credit Suisse is more optimistic about FME’s top line with growth rates of 6.4% and 6.8% between FY24E and FY26E</li> <li>▪ A similarity is the rather slow start in FY23E (3.5% versus 4.4%) and the take-off in FY24E.</li> </ul>
EBIT Margin Improvement	5.1% (FY22A – FY32E)	3.3% (FY22A – FY30E)	<ul style="list-style-type: none"> <li>▪ Credit Suisse models the EBIT margin to increase constantly over the projection period to 11.8% in FY32E, which is highly optimistic</li> <li>▪ Clear rationales for this improvement are not published</li> <li>▪ However, it implies that Credit Suisse strongly believes in the long-term benefit of the transformation program with sustainable margins from FY26E onwards</li> </ul>
CapEx as % of Sales	6.0% - 7.4%	8.8%	<ul style="list-style-type: none"> <li>▪ Credit Suisse’s CapEx forecast appears conservative, given the high top line growth</li> <li>▪ This indicates that Credit Suisse believes FME is able to generate revenue growth massively through existing asset base</li> <li>▪ Inflation should also be considered in CapEx</li> </ul>
WACC	8% flat	Dynamic approach of computing the WACC for each Year	<ul style="list-style-type: none"> <li>▪ A constant WACC over the 10-year projection period is doubtful due to the macroeconomic environment changes and Gretler’s assumed profitability growth</li> <li>▪ The fixed WACC of 8% also does not capture FME’s changes in capital structure linked to the fixed repayment schedule of debt</li> <li>▪ The dynamic approach is therefore considered to be superior.</li> </ul>
EV to Equity Bridge	Capitalized Minorities	Market Value Minorities and Investments in Associated Companies, Inclusion of Surplus Assets (Liabilities)	<ul style="list-style-type: none"> <li>▪ Credit Suisse applies a different procedure by not utilizing the MV of minorities but capitalized minorities</li> <li>▪ Additionally, the bank does not include the value of investments in associated companies nor the put option liabilities.</li> </ul>
Terminal Growth Rate	1%	2%	<ul style="list-style-type: none"> <li>▪ It seems questionable to have a constant top-line growth of &gt;5% (excl. FY23E) with continuously increasing margins and a perpetual growth of 1%.</li> </ul>

Source: Credit Suisse 2023

The perpetuity growth rate and the WACC are the main drivers for the deviation in valuation with Credit Suisse (EUR 35) building the lower base and the Thesis the upper case at EUR 47.35. A comparison of CCA results as well as a football field analysis is provided in [Appendix 26 and 27](#), respectively.

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## Appendix 1 – Valuation Differences CTA and CCA

The difference between the stand-alone value and the expected market price of a company is that deal multiples (yielded in a CTA), in contrast to stock multiples (yielded in a CCA), usually include an acquisition (takeover) premium. The premium reflects the expected benefits in terms of synergies but also transaction costs linked to gaining control over the acquired company (Massari, Gianfrate, & Zanetti, 2016). It is the percentage actually paid by the acquirer in excess of the fair value of the acquired company (Hayes 2020). In general, due to this premium, the CTA yields higher multiples than the CCA. In practice, in both types of valuation analyses, extreme multiples (outliers), distorting the average or median benchmark are excluded.

## Appendix 2 - Free Cash Flow to Equity

In contrast to the priorly described FCFF and APV approach, the free cash flow to equity (FCFE) approach is used to ultimately determine the value of the equity portion of a firm (Goedhardt, Koller, & Wessels, 2010). The FCFE is therefore defined as “[...] the cash flow available to the company’s holders of common equity after all operating expenses, interest, and principal payments have been paid and necessary investments in working- and fixed capital have been made” (Pinto et al., 2014). This leads to two ways of computing it with the one starting from revenues and the other one beginning with the (unlevered) FCFF and adjusting it with the non-taxable portion of interest expenses and the changes in debt. The remaining cash in both ways is attributable to the firm’s equity holders (e.g., for dividends or share buybacks). Equivalent to the FCFF and APV method, to conduct a company valuation, the expected cash flows as well as the terminal value must be discounted. In the case of FCFE, the levered cost of equity is used as it reflects the shareholder’s expected return for investing in a firm with respective risks.

$$FCFE = FCFF - Interest\ Expenses * (1 - t_c) + \Delta Net\ Debt \quad (14)$$

$$Equity\ Value = \sum_{i=1}^n \frac{FCFE_i}{(1+r_{e(l)})^i} + \frac{TV}{(1+r_{e(l)})^n} \quad (15)$$

Noteworthy regarding the characteristics of this approach is, if a company decides to increase leverage by funding future investment with the issuance of new debt, the FCFE increases

alongside the cost of equity (via a higher levered beta) leading to more discounting. Therefore, a firm's equity value does not necessarily rise by solely maximizing the amount of debt.

The FCFE approach is beneficial in cases where a firm has a high degree of outstanding debt with little to no expected changes in capital structure (e.g., debt repayments or equity raising) over the valuation period. In times of negative FCFE or anticipated changes in capital structure, the FCFF and also the APV are assumed to be superior (Pinto et al., 2014, Damodaran, 2012). Furthermore, with the equity value only reflecting a portion of the enterprise value, the FCFE approach is more sensible towards growth and risk assumptions. However, ultimately FCFF, APV, and FCFE should yield in theory the same results.

### **Appendix 3 - Dividend Discount Model**

The Dividend Discount Model (DDM) is a valuation technique used to value a company's equity based on the dividends paid out to shareholders. The underlying premises is that the intrinsic value of a company's stock equals the present value of all expected future dividends, a shareholder is entitled to (Farrell, 1985).

To conduct this valuation technique, several steps are required. First, the expected future dividends must be calculated. These are either derived from the company's historical dividend payments or projected future earnings and therewith related professional judgement of the pay-out ratio. It is important to account for the company's dividend policy and factor in future growth prospects as well as the stability of dividend payments. Second, an appropriate discount rate is required, reflecting the investor's required return so the levered cost of equity. The discount rate can be computed using the CAPM. Third, the expected dividend growth rate must be estimated again either based on historical dividend growth patterns or projections. Additionally, potential existing plans of the company with regards to equity raising, issuance or exercising of options, share buybacks or corporate actions such as mergers or acquisitions must be considered as they have either a dilutive or accretive effect on the dividends per share.

The most common DDM model is the Gordon Growth Model with the premises that dividends grow indefinitely at a constant rate. An extension of this model is the two-staged-growth-model in which future dividends are separated into two growth stages to account for the growing phase of a company and capture the company's projected growth in perpetuity (Damodaran, 2012).

However, the DDM has several shortcomings. On the one hand, the DDM assumes dividends to be the primary source of returns for shareholders. Therefore, for high growth companies (e.g., within the technology sector) that are oftentimes not paying a dividend the application of the DDM is limited (Damodaran, 2012).

On the other hand, the estimation of future dividends imposes various difficulties. As the accuracy of the DDM highly depends on the company's earnings, even minor changes in the business environment and macroeconomic conditions can impact the valuation severely. This also applies to the estimated dividend growth rate; small changes can significantly influence the intrinsic value. The considerable sensitivity exhibited by the DDM towards underlying assumptions renders its applicability in valuing a company's equity challenging, particularly in economic contexts coined by strong headwinds.

#### **Appendix 4 - Indirect Cost and Direct Cost of Bankruptcy**

Indirect cost of bankruptcy entails mainly administrative and legal fees occurring in the event of bankruptcy, accounting for 3% to 5% of the firm value (Gruber and Warner, 1977). Since indirect costs of bankruptcy are, in contrast to the direct costs, not directly observable and contribute the largest portion to the total bankruptcy costs, they build a substantial downfall of the APV method. According to Shapiro and Titman 1985, even though they lack to find direct evidence, these cost range between 25% - 30% of the firm value. Key factors for these indirect bankruptcy costs are key personnel, brand image, reputation, customer, and investment opportunity losses. Nevertheless, these cost are also dependent on firm-, business model-, and industry characteristics and differ due to the tradability of the underlying assets of a firm in the case of bankruptcy (e.g., fire-sale of machinery versus brands and intellectual property rights).

#### **Appendix 5 - Terminal Value: Exit Multiples and Liquidation Technique**

Exit multiples are based on a financial statistic (e.g., EBITDA) of the firm's terminal year multiplied by the current LTM multiples of comparable traded companies. Hence these might be subject to economic or industry specific cycles, the usage of normalized metrics can help avoid skewed results. A limitation of this approach is the mix of intrinsic and relative valuation techniques (Damodaran, 2012).

With the liquidation technique, a finite life of the company is assumed. In this case, the TV is estimated as if the firm's total assets are being sold at a negotiated price to the highest bidder at the end of the explicit projection period.

## Appendix 6 - Market Value of Debt and Equity

With the cost of capital being weighted at the market value (MV) of debt and equity, these must be determined. The MV of debt is the sum of market values of outstanding short- and long-term debt, such as bonds, loans, and other financial obligations (e.g., leases). For short-term debt, excluding WC components, the BV can be considered to equal the MV. For the long-term portion, outstanding bonds on the one hand directly reflect the MV and the remaining MV on the other hand can be calculated by using the following bond pricing formula (Damodaran, 2012).

$$MV \text{ of } LT \text{ Debt} = c \left( \frac{1 - \frac{1}{(1+r_d)^i}}{r_d} \right) + \frac{FV}{(1+r_d)^i} \quad (16)$$

The coupon is thereby defined as the latest interest expenses paid (excluding interest paid on leases) by the company and the maturity constitutes of the weighted average maturities of the remaining debt instruments. However, the bond pricing formula does not apply to lease liabilities due to the variable characteristics of lease terms. Therefore, to account for the leases additionally, their carrying amount is assumed to equal the MV.

The market's perception of a company's equity (MVE) includes common stock, minority interest (only for minority stakes in listed companies), and if listed, preferred stock. The corresponding formula below highlights the composition.

$$\begin{aligned} MV \text{ of } Equity &= \text{Common Shares Outstanding} * \text{Share Price} \\ &+ MV \text{ of } Preferred \text{ Stock} + MV \text{ of } Minority \text{ Interest} \end{aligned} \quad (17)$$

On the downside, the formula is not applicable for an annual WACC calculation over the projection period. In this case, the EV is computed using an according multiple and is bridged towards the firm's equity value.

## **Appendix 7 – Second Estimation Method for Beta**

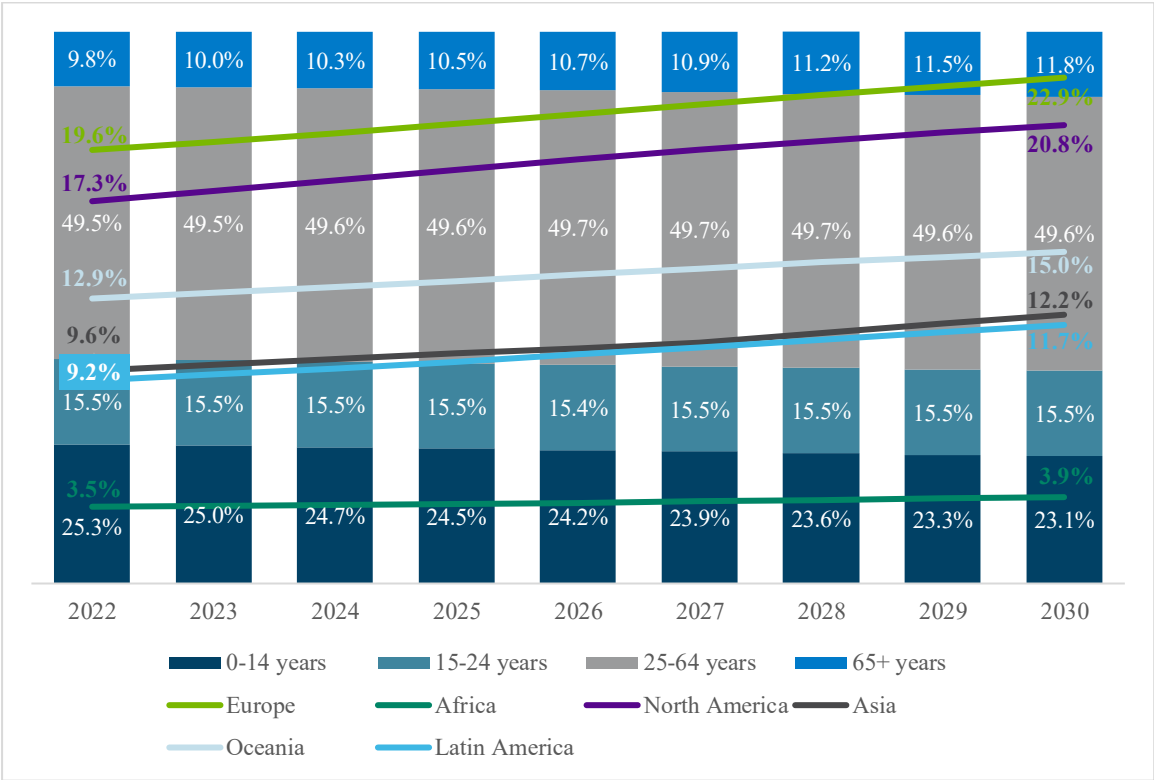
The second method relies on the usage of median or average beta values from a set of comparable companies, incorporating underlying fundamental and historical values but also projections, thereby accounting for going forward expectations.

## **Appendix 8 - Structural Market Drivers**

Commencing on with structural market drivers, demographics with regards to age, prevalence of diabetes or cardiovascular disorders among population as well as the access and affordability of dialysis treatment are amongst the most important ones.

First, the age distribution of population influences the demand for dialysis products and services since people with 65+ years are more prone to kidney diseases. The UN projects the population share of people in the age of 65 and above to be 22.9% in Europe, 3.9% in Africa, 20.9% in North America, 12.2% in Asia, 15.0% in Oceania, and 11.7% in Latin America till 2030, favouring the demand for dialysis treatment. The median percentage of global population worldwide of 65+ years is estimated to rise from 9.8% in 2022 to 11.8% in 2030. A similar trend pattern is observable for life expectancies. For Europe (90.1 years) and North America (90 years), life expectancy tends to converge. The World average life expectancy is 82.1 years in 2100. To put both factors in a nutshell, demographics are suggesting strong tailwinds for the dialysis market.

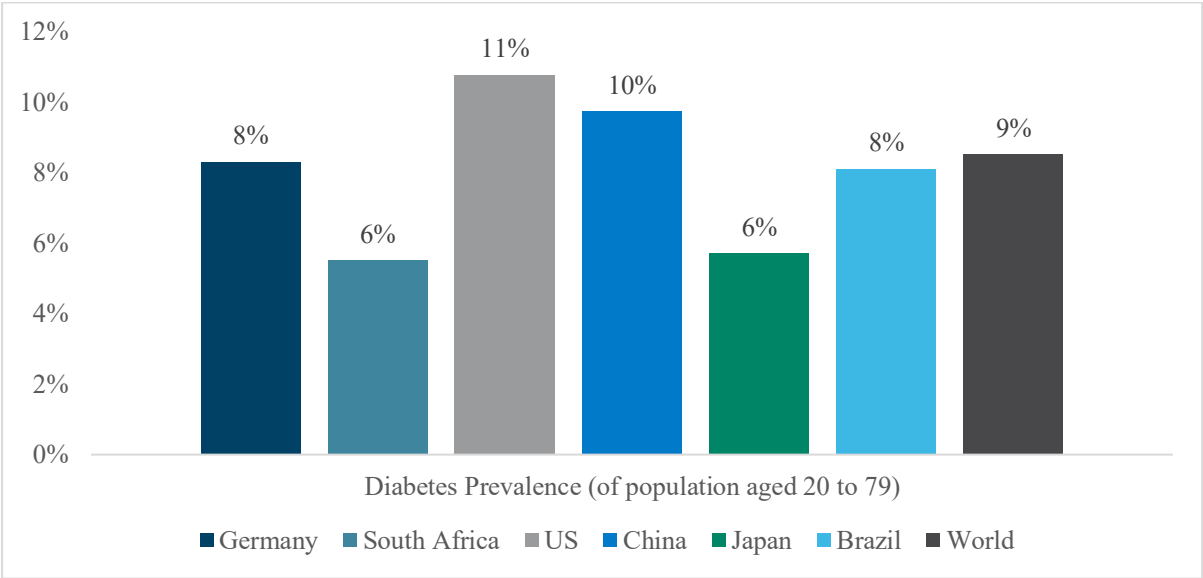
Table 38 Global Age Group Distribution Projection and Population Share Projection (65+ years) by Region (2022)



Source: United Nations, 2022

Second, prevalence of diabetes or cardiovascular disorders among population is an CKD and ultimately ESDR influencing factor. Since the data for diseases is difficult to project, the data from 2017 was retrieved. The datapoints are used as proxy for the reasons of CKD and ESDR. The chart below underlines the seriousness of diabetes, one of the main causes for kidney diseases, in the most important dialysis market, the US with 11% of population being affected.

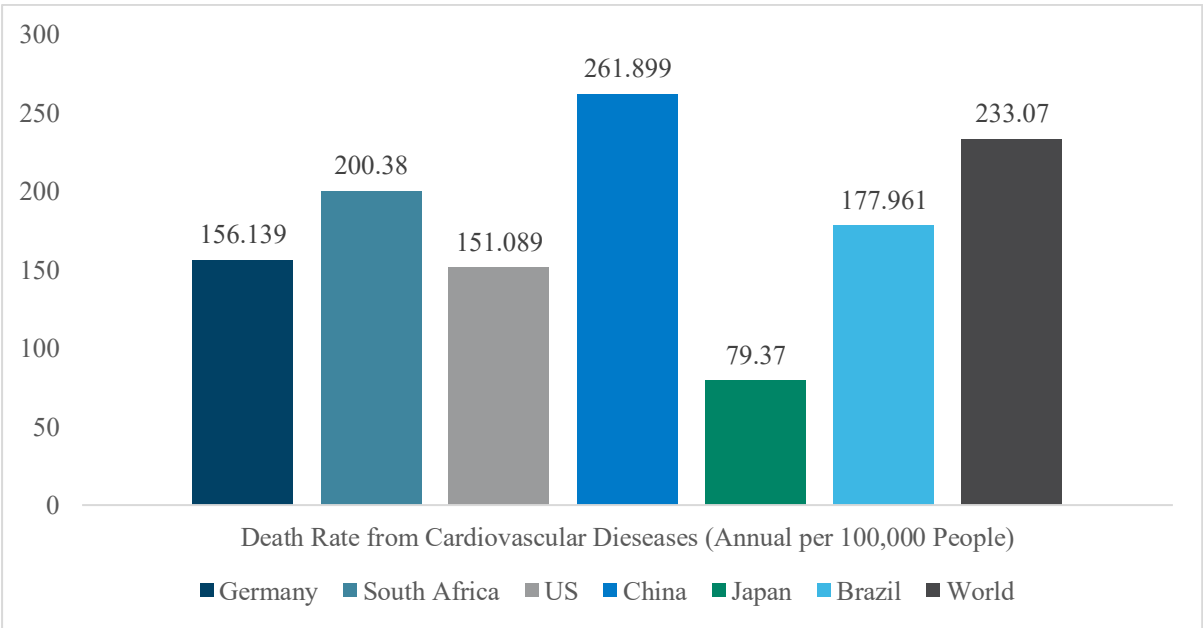
Figure 25 Diabetes Prevalence in Selected Countries (2017)



Source: Mathieu et al. 2023

Noteworthy, deaths resulting from cardiovascular diseases are significantly higher in emerging countries/ regions such as Africa, China, and Brazil than in western countries. One reason could be the so far missing healthcare infrastructure and accessibility for broad sections of the population, pointing at the potential of further development, also with regards to kidney disease treatments.

Figure 26 Death Rate from Cardiovascular Diseases for Selected Countries (2017)

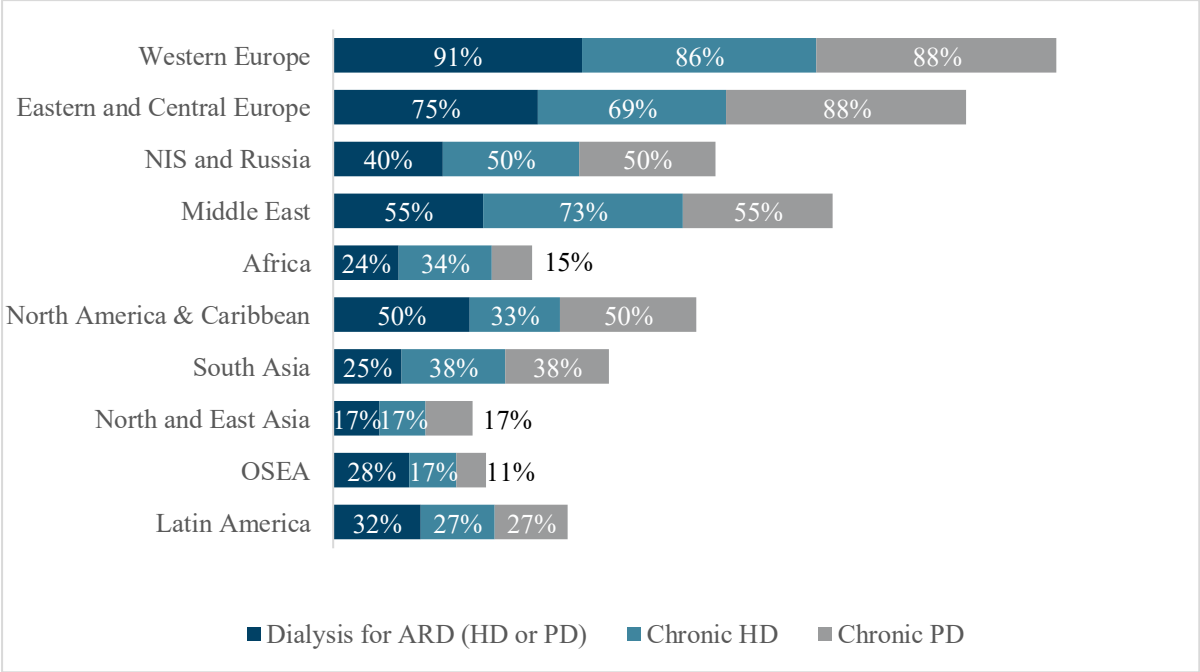


Source: Mathieu et al. 2023

Third, the impact of accessibility and affordability of healthcare on the overall dialysis market plays a major role. The former is particularly shaped by the status of dialysis clinic and nephrologist infrastructure. Developing countries offer great opportunities for expansion in this respect for corresponding product and service providers. Especially regions with low(er) population density lack access points for dialysis treatments as they are less lucrative for dialysis providers. Therefore, these regions could benefit from telehealth solutions and build an interesting sales market for IoT driven home HD and PD products. In addition to the network of dialysis clinics, the availability of medical personnel also plays a crucial role. This is also an area for potential improvement in industrialized countries.

As far as affordability is concerned, there are major differences in the healthcare system. In general, the more costs get covered by public and private insurers, the lower the barriers for people with kidney failure to seek treatment, as they must pay less out of their own pockets. Western Europe is one of the pioneers in this respect. In the APAC and Latin American region, however, additional subsidies are needed to establish nationwide dialysis treatment. It should also be noted that the available income is further deterministic for the quality of treatment. Gaps created by the healthcare system can be filled by individuals themselves with higher incomes. Since disposable income has risen in recent years, especially in industrialized countries, it can be assumed that both the quality of treatment and the number of patients to be treated will rise in the future.

Figure 27 Dialysis Treatment publicly funded by Governments (2021)



Source: International Society for Nephrology, 2023

## **Appendix 9 - Monetization and Regulatory Environment for Selected Countries**

The remuneration of kidney failure treatment is usually handled by governmental or public health insurers, private health insurers and companies as it is a common, life-threatening disease. Therefore, in general, the costs are not beard by patients themselves. The system of monetization differs from regions and countries, sometimes even within a country. Determining factors for the cost coverage and covered degree of treatment are economic status of a country, regulatory frameworks, methods of treatment, type of dialysis service provider (public vs. private) (FME Annual Report, 2022).

For instance, in the US with a vast majority of patients being insured via the governmental institution Centres for Medicare and Medicaid (CMS), the flat rate compensation for chronic and acute renal disease care amounted to USD 257,90 per treatment and was increased for 2023 to USD 265,57 per treatment due to inflation and productivity adjustments in line with the Affordable Care ACT (FME Annual Report, 2022). Accordingly, CMS anticipates dialysis providers to increase prices per treatment by 3% on average compared to 2022 (FME Annual Report, 2022).

The Supreme Court decision in the case of Marietta Memorial Hospital Employee Health Benefit Plan versus DaVita Inc., in favour of the former one, to declare dialysis providers as “out of network” and paying respective providers less for treatments, raising the long-term risk of exclusion of such services from various private health insurers (Marietta Memorial Hospital Employee Health Benefit Plan et al. v. DaVita Inc., 2022). The Restore Protections for Dialysis Patients Act was submitted to the US Senate to regain the previous status (United States Congress, 2022). A corresponding approval is pending.

In Germany, dialysis treatments for patients with chronic kidney failure are covered in full by the statutory health insurance (STADA Pharm). This is the case for regular HD and PD treatments. To put it in context, this includes approximately 90% of the German population (Gesetzliche Krankenkassen Verband). The treatment cost coverage for patients with private health insurance is dependent on the individual insurance contracts (KfH, 2021).

In China, medical care differs greatly in terms of availability and quality for rural areas and metropolitan regions. The financing of healthcare is based on governmental funding, commercial health insurances, public health insurances (e.g., basic medical insurance, new rural co-operative medical care), and self-payment (Yumeng et al., 2022). The management of public health administration and financing of hospitals occurs at the city or provincial level (Yumeng et al., 2022). To address the growing prevalence of kidney diseases, China approved private dialysis clinics in 2016. Moreover, the government “encouraged the establishment of independent HD clinics” (Dandan & Xinyi, 2022). As noted by the authors, reimbursement rates for the cost of dialysis treatment are contingent upon the organisational structure, and therefore vary across regions (e.g., in Xian ~90% cost reimbursement (Dandan & Xinyi, 2022)). On average, the medical expenditure for chronic kidney failure is EUR ~1,192 (Yumeng et al., 2022). Noteworthy, the variation in costs for public or private clinics is minimal (Dandan & Xinyi, 2022). However, these costs are significantly higher (26.35%) for patients living in rural areas as they need to travel across provinces to receive proper dialysis treatment and do not get the same reimbursement as patients within a respective province (Yumeng et al., 2022).

## **Appendix 10 -Interest Rate Environment**

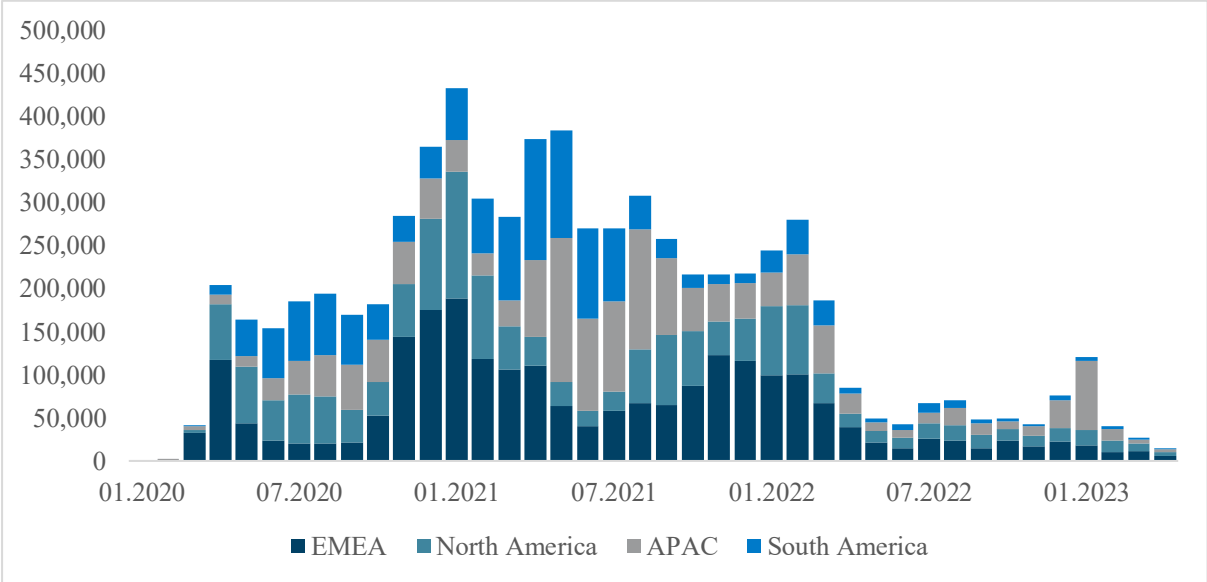
In order to counter the rising inflation and to ensure the mission of stabilized economic growth with an inflation rate at ~2%, Central Banks worldwide decided to raise interest rates. The current US base rate is 475bps to 500bps, resulting from a 9 time increases by the Federal Reserve Bank (FED), each of 25bps- 75bps since the beginning of 2022 (Federal Reserve Bank, 2023). In contrast, the European Central Bank (ECB) remains more conservative with 6 raises and a deposit rate of 300bps to account for the economic situation and indebtedness of countries such as Italy or Spain (European Central Bank, 2023). However, it is observable that the ECB still follows its historic course of adjusting interest rates in line with the FED. The time lag between the ECB and FED is, according to macroeconomic data, expected to lead to a faster recovery for the US economy compared to the European. On the other side of the Pacific Ocean, the interest rate of China as the largest economy in this region remains unaffected within its target corridor of 200bps, making the Asian market prospectively more attractive (IMF, 2023).

Higher interest rates cause higher cost of debt for companies and negatively influence thereby earnings as well as the issuance of new debt. This can be crucial for the expansion of companies (in the dialysis market). Also, companies might face difficulties for refinancing which can also impact the risk of financial distress.

# Appendix 11 - Covid-19

The Sars-CoV-2 virus spread worldwide and was therefore declared a global pandemic on 11<sup>th</sup> of March 2020. In the absence of a proper vaccine, which was first introduced in late 2020, the infection disseminated rapidly and caused numerous deaths.

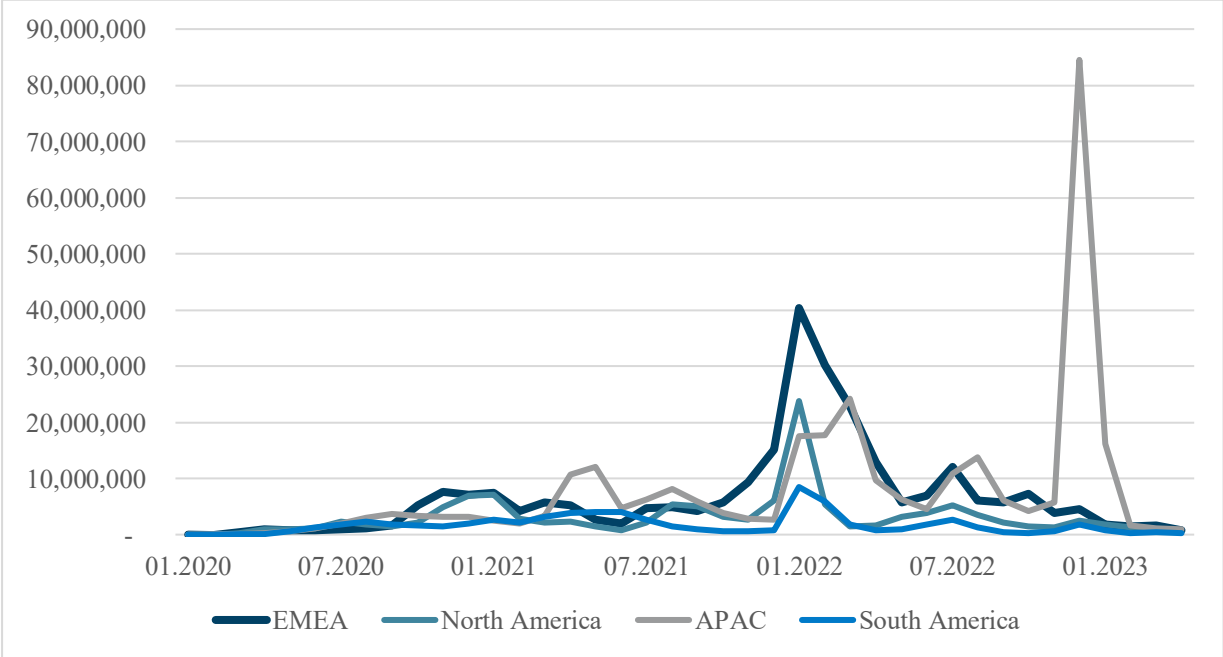
Figure 28 New Death Cases per Month by Region (2020–2023)



Source: Mathieu et al. 2023

The virus itself but also the counterfeits shaped especially the healthcare industry for numerous reasons.

Figure 29 New Infection Cases of Sars-CoV-2 per Month by Region (2020–2023)



*Source: Mathieu et al. 2023*

First, the virus impacted people of higher ages (65+ years) and people with pre-existing health conditions such as diabetes or cardiovascular disorders (WHO, 2019). This is the patient group also vulnerable to renal diseases (Henderson, Davies, & Vanholder, 2021). The fact that a large proportion of patients receives their dialysis in respective clinics, especially those with ESRD, has significantly affected their ability to self-isolate and self-protect from physical spread, including between patients (Palevsky & Radhakrishnan, 2022). This is further showcased by the excess mortality during the course of the pandemic, leading not least to a decline in the number of patients in the USA for the first in 50 years (National Kidney Foundation, 2022).

Second, the generally already scarce staff in the healthcare sector was especially involved in the care of Covid-19 patients and the subsequent vaccination, which led to staff shortages in the dialysis sector. Furthermore did the workload, risk of infection, and stress increase significantly for healthcare professionals (Gupta et al., 2021). In the US, 31% of healthcare employees thought about changing jobs, implying a successive increase in personnel fluctuations (Galvin, 2021).

Consequences for the dialysis market were a drop in patient growth from 6.4% (2011-2019) to 3.4% (2019-2021), disrupted operations, and margin pressure (FME Annual Report, 2022). Even though the pandemic is subsiding, the aftershocks are still visible in the industry. To buffer the Covid-19 implications on the (healthcare) industry, the US for instance launched the USD ~2tn Coronavirus Aid, Relief, and Economic Security act (CARES) (US Department of the Treasury, 2020).

## **Appendix 12 - Company Strategy and Goals**

The company's strategy and goals are centred around FME's products and healthcare services. A particular focus lies on three core areas: Holistic renal therapy, intensive care solutions, and supporting business activities. The holistic renal therapy is based on FME's key competencies in the field of product innovation, ambulatory facilities, standardization of medical procedures, and patient coordination. Especially digital technologies such as artificial intelligence enhance patient data analysis and can be used to develop new care programs and models (e.g., customized dialysis treatment or comprehensive dialysis in a home-based setting). Partnerships with health insurers and other cost bearers can strengthen the company's efforts of providing

cost-efficient care with risk- and value-based programs. To provide seamless accompaniment of patients along the treatment journey, an ambition is to successively expand the risk- and value-based program. This has been already achieved partially with the inclusion of chronic renal failure treatment and is planned to be supplemented with kidney transplantations. Furthermore, cooperations and investments in start-ups are executed to access new and disruptive technologies.

Intensive care solutions are expected to gain greater importance over time, implying the need for acute dialysis and extracorporeal intensive care therapy. Supporting business activities comprise of partnerships, investments, and acquisition for the expansion of FME's existing network to increase the medical value-add at lower costs.

Moreover, sustainability has become an integral part of the company's strategic orientation. Advancements in patient and employee satisfaction as well as product and services sustainability (e.g., resource conserving production) have therefore been paired to the remuneration of the executive board in order to align interests.

## Appendix 13 - Additional Explanation Stock Price Development

The stock of FME (FMEG.DE) demonstrates weak performance, both in absolute and relative terms (compared to major stock indices). Covid-19 and the accumulation of excess mortality of FME's patients had severely impacted the business. This is especially due to a lower occupancy of dialysis clinics which is a critical factor because of high fixed operating costs (e.g., personnel costs and rent), negatively affecting the company's profitability and stock over the course of the pandemic. To counter this effect and rebound towards stronger profitability, the company initiated its transformation program to rework the operating model, tighten the dialysis clinic network, leave non-lucrative markets, and thus allocate capital more efficiently. Additionally, the Russia- Ukraine war influenced the clinics business in the respective region, further requiring the company to adjust its geographic footprint.

Table 39 FMEG.DE absolute and relative Stock Performance as of 31<sup>st</sup> of December 2022

<b>Performance</b>	<b>3M</b>	<b>6M</b>	<b>LTM</b>	<b>2Y</b>	<b>4Y</b>
Absolute	6.9%	-44.4%	-45.8%	-55.1%	-45.2%
Relative to DAX	-7.2%	-41.5%	-32.7%	-56.5%	-77.1%
Relative to STOXX EUR 600 Health Care	0.4%	-41.4%	-38.4%	-68.5%	-85.9%
Relative to Dow Jones Industrial	-5.5%	-45.4%	-36.4%	-63.4%	-87.3%

Source: Refinitiv Eikon

Moreover, the systemic scarcity of healthcare professionals represents a significant concern. Next to the already developing wage-price spiral in 2022, the company had to pay its personnel surcharges, bonuses for job-starters, and rely on costly temporary workers to encounter the job market situation. Due to this bottleneck, dialysis clinics in North America were even restrained from admitting new patients, giving hints on the severance of this structural issue and therewith negatively coined outlook. Furthermore, inflation led to increases in raw material, logistic, and energy prices, putting pressure on the company's profitability in the medical product business segment. In terms of regulation, the Supreme Court's decision in 2022 of allowing the exclusion of dialysis treatments from the healthcare service catalogue from one health insurer raised uncertainty about prospective operations in the company's largest market. Additionally, inclining interest rates and related debt service costs did create a burden for the firm's shares.

#### **Appendix 14 - Healthcare Services Revenue Forecast Explanation**

As mentioned in the main part, the healthcare services revenue composites of number of patients, treatments per patients, and price per treatment.

Beginning with the number of patients, FME's management issues a projection on how many patients the company is expected to treat in the subsequent year in each of the respective regions. For forecasting the treated patients, the historical projections were compared to the company's actual patient growth by region to find deviations. The median of actual versus projected patient growth in key markets is then applied to FME's estimation for 2023 to assess the number of patients in FY23E. Going forward, the historical average of patient growth is applied. With a large number of patients already treated by FME in North America (~30% of total patients) and limited expansion plans in this region, the forecast is relatively flat. For APAC and Latin America, the Covid-19 aftermath in terms of excess mortality of dialysis patients and the related negative impact is prevailing in FY23E. Afterwards however, the number of FME's treated patients in APAC and Latin America is assumed to rise by additional 0.05% each year as healthcare is getting more accessible, disposable income rises in these emerging markets, and improvements in diagnostics will lead to a higher detection of ESRD affected patients and subsequently a higher demand for dialysis treatment.

Table 40 FME's Dialysis Patient Forecast

Patient Growth Actual vs. Projection	Historicals				Median Hist. Dev.	FME's Projection
	2019A	2020A	2021A	2022A		2023
Actual Growth North America	3.4%	-0.4%	-0.5%	-0.5%		
Projected Growth North America	4.0%	3.0%	0.5%	2.0%		1.0%
<b>Deviation Actual vs. Projection</b>	<b>-0.6%</b>	<b>-3.4%</b>	<b>-1.0%</b>	<b>-2.5%</b>	<b>-1.0%</b>	
Actual Growth EMEA	1.8%	-0.3%	-0.6%	0.7%		
Projected Growth EMEA	4.0%	4.0%	2.0%	3.0%		3.0%
<b>Deviation Actual vs. Projection</b>	<b>-2.2%</b>	<b>-4.3%</b>	<b>-2.6%</b>	<b>-2.3%</b>	<b>-2.3%</b>	
Actual Growth APAC	4.9%	0.3%	2.0%	0.7%		
Projected Growth APAC	8.0%	8.0%	5.0%	7.0%		6.0%
<b>Deviation Actual vs. Projection</b>	<b>-3.1%</b>	<b>-7.7%</b>	<b>-3.0%</b>	<b>-6.3%</b>	<b>-3.2%</b>	
Actual Growth Latin America	6.5%	6.8%	-1.1%	-1.3%		
Projected Growth Latin America	3.0%	3.0%	-2.0%	3.0%		3.0%
<b>Deviation Actual vs. Projection</b>	<b>3.5%</b>	<b>3.8%</b>	<b>0.9%</b>	<b>-4.3%</b>	<b>0.9%</b>	

FME Patients by Region	Historicals		Explicit Forecast						
	2022A	2023	2024	2025	2026	2027	2028	2029	2030
Dialysis Patients North America	208,310	208,392	210,322	212,270	214,236	216,221	218,224	220,245	222,285
Growth	-0.5%	0.0%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
Dialysis Patients EMEA	66,063	66,530	67,237	67,951	68,672	69,401	70,138	70,883	71,635
Growth	0.7%	0.7%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Dialysis Patients APAC	34,001	34,967	35,978	37,036	38,143	39,303	40,518	41,791	43,124
Growth	0.7%	2.8%	2.9%	2.9%	3.0%	3.0%	3.1%	3.1%	3.2%
Dialysis Patients Latin America	36,313	37,734	39,230	40,804	42,462	44,209	46,049	47,989	50,035
Growth	-1.3%	3.9%	4.0%	4.0%	4.1%	4.1%	4.2%	4.2%	4.3%

Sources: FME Annual Report, Own Estimates

In the US, Medicare and Medicaid, the federal and state-run health program covers the costs for, among other diseases, all US citizens affected with ESRD and therefore dialysis patients. The Centers for Medicare & Medicaid Services (CMS) sets a flat rate remuneration per treatment per patient each year for the following year (e.g., CMS determines in 2022 the remuneration rate for 2023). The rate is immensely important for FME, as CMS accounts for 26% of the company's group revenues.

The annual increase in compensation premium is based on three factors. First, the ESRD market basket factor, reflecting the US inflation rate. Second, a multi-factor productivity index, and third, a wage index budget-neutrality adjustment factor. For 2023, the rate is set to USD 265.56.

To forecast it, US inflation rate estimates by IMF (for each prior year respectively as that is the base for the future remuneration) is used. This is also due to the market's characteristics of being driven by fundamental data and therefore rather slow-paced and steady. For the other two

determining factors, the productivity index of 0.1% as well as the wage index (0.99973) (both for the 2023 compensation rate) were rolled forward.

Analysing FME's revenue per treatment for North America (with the US as best proxy), ~63% is attributable to CMS and ~37% to private health insurers/ out of pocket payer ("other payers"). To elaborate on the pricing of other payers, their historical price development was mapped against the (prior year's) inflation. Afterwards, US inflation is applied to the (USD) prices for forecasting purposes. The share of contribution is fixed on 2022 information and USD prices get converted to EUR (approximating the forward exchange rates by US vs. EU inflation, further reflecting the current interest rate strategies and underlying real GDP growth of both economies). The foreign exchange approximation certainly has several limitations, but the breakdown method of prices/ revenues in USD is considered to be the most detailed approach.

Future revenues per treatment for the US is then calculated by weighting the prices by contribution share of CMS and other payers in EUR.

## **Appendix 15 - Cost of Sales Forecast**

The cost of sales is split between raw materials, cost of purchased services, personnel cost, and other cost of sale. For raw materials, main input goods (crude oil, rubber, aluminium, metals as highlighted in the market section) are identified and adjustments made in line with the projection for the respective price changes. This is done through a revenue adjusted historic price analysis of raw materials cost compared to the baseline changes of input goods (median deviation applied towards the projections). The effect of decreasing oil prices (not only as input good in production but also as proxy for energy prices, important for the operation of the >4,000 dialysis clinics) will improve gross profit margins in FY23E by ~3%. The raw price effect afterwards until FY30E inclusive is expected to be rather marginal.

Table 41 Cost of Raw Materials Forecast

Cost of Raw Materials (EURm)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
<b>Cost of Raw Materials</b>	(3,725)	(3,668)	(3,622)	(3,940)	(4,161)	(4,476)	(4,683)	(4,894)	(5,116)	(5,344)	(5,588)	(5,811)
as % of Sales historic	21.3%	20.5%	20.6%	20.3%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%
Raw Material Price Adjustment					715	195	188	171	149	162	170	177
<b>Final Cost of Raw Materials</b>	<b>(3,725)</b>	<b>(3,668)</b>	<b>(3,622)</b>	<b>(3,940)</b>	<b>(3,446)</b>	<b>(4,281)</b>	<b>(4,495)</b>	<b>(4,723)</b>	<b>(4,967)</b>	<b>(5,181)</b>	<b>(5,418)</b>	<b>(5,634)</b>
as % of Sales					17.0%	19.7%	19.7%	19.8%	20.0%	19.9%	19.9%	19.9%
% Change in Cost of Raw Materials adj. by Changes in Revenue		-3.7%	0.1%	-1.3%								
Historic Raw Material Price Changes	-3.2%	-0.8%	45.9%	1.9%	-13.9%	-1.1%	-0.8%	-0.2%	0.4%	0.2%	0.2%	0.2%
Crude Oil	-10.4%	-32.0%	65.8%	39.2%	-24.1%	-5.8%	-2.8%	-2.3%	-2.1%	-2.0%	-2.0%	-2.0%
Rubber	6.3%	6.8%	18.3%	-11.9%	-13.8%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Aluminium	-14.9%	-5.0%	45.1%	9.5%	-14.1%	4.8%	4.8%	4.1%	3.8%	2.1%	2.1%	2.1%
Metals	3.9%	3.5%	46.7%	-5.6%	3.5%	-2.6%	-1.5%	-0.5%	0.7%	0.4%	0.4%	0.4%
Deviation Change of Cost of Raw Material & Raw Material Prices		-2.9%	-45.8%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%

Sources: FME Annual Report, Own Illustration

Cost of purchased services are held flat at 1.4% of sales over the projection period.

Table 42 Cost of Purchased Services Forecast

Cost of Purchased Services (EURm)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
<b>Cost of Purchased Services</b>	<b>(228.5)</b>	<b>(236.3)</b>	<b>(240.7)</b>	<b>(280.9)</b>	<b>(293.3)</b>	<b>(315.4)</b>	<b>(330.0)</b>	<b>(344.9)</b>	<b>(360.5)</b>	<b>(376.6)</b>	<b>(393.8)</b>	<b>(409.5)</b>
as % of Sales	1.3%	1.3%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%

Sources: FME Annual Report, Own Illustration

The forecasting of personnel cost follows a top-down approach. Basically, the revenue per employee for FY22A is retrieved and applied to the projected sales in FY23E to get the number of total employees required. Productivity adjustments are made as FME's transformation program is expected to decrease organisational burdens and leverage operational efficiency. Further productivity drivers which are expected to increase the revenue per employee are the adaption of the lean manufacturing principle in not yet updated production facilities and changes in the services structure. The productivity adjustment is related to the company's reorganized reporting and governance structure. FME communicated with shareholders that due to a more centralized and global go-to-market strategy (from 2023 onwards), compared to the regional and decentralized approach, bureaucratic burdens are expected to lower, and productivity as well as efficiency is expected to increase. For the services segment, the increasing importance of home-treatments (e.g., via the remote control of home HD machines of patients, automated CAPDs, etc.) revenue per employee is assumed to increase. As the

aforementioned factors are hard to quantify, the implications are proxied with a productivity adjustment. With the new operating model implemented in 2023, true productivity increases are not likely to happen in that year due to implementation difficulties (e.g., employees must first fully adapt to the new system in order yield productivity increases). Therefore, the adjustment is expected to start in FY24E with 2.5% and increase by 1% in FY25E (the last year of transformation program) and commence with 0.25% per year as the effect is expected to diminish over time. The pattern of this productivity effect is therefore modelled similar to synergies.

Then, the FY22A share of employees dedicated to production and services of total employees is held fix to get the required production and services personnel in FY23E. The average cost per employee is adjusted for expected increases in each region with North America having the highest due to labour market shortage for healthcare professionals and high barriers of entry for respective jobs (e.g., University diploma prerequisite for nephrologists, nursing school certificate, etc.). This effect will lower over time as with wage increases in this field of profession, job opportunity attractiveness increases. Additionally, with the advancement of home dialysis solutions (e.g., telehealth), the patient coverage per service employee increases. For APAC and Latin America, the wage increase is assumed to be lower as employees in these regions have in general less bargaining power against multinational corporates. Also, the demand for specialized personnel is not as prevalent as in EMEA or North America. Finally, the adjusted average cost of personnel is weighted by the share of employees by region.

Table 43 Cost of Services and Production Personnel Forecast

Cost of Production and Services Personnel (EURm)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
<b>Cost of Production and Services Personnel</b>	<b>(5,895)</b>	<b>(6,068)</b>	<b>(5,949)</b>	<b>(6,821)</b>	<b>(7,396)</b>	<b>(8,060)</b>	<b>(8,452)</b>	<b>(8,806)</b>	<b>(9,134)</b>	<b>(9,423)</b>	<b>(9,686)</b>	<b>(9,861)</b>
Number of Production and Services Employees (FTE Equivalent)	103,896	113,628	112,201	111,472	116,371	122,114	123,454	124,349	124,976	125,234	125,314	124,398
<b>Total Number of Employees (FTE Equivalent - Number Adj. by Mgmt.)</b>	<b>119,833</b>	<b>132,341</b>	<b>131,310</b>	<b>129,741</b>	<b>135,443</b>	<b>142,127</b>	<b>143,686</b>	<b>144,728</b>	<b>145,458</b>	<b>145,758</b>	<b>145,851</b>	<b>144,786</b>
Share of Employees in Services and Production	86.7%	85.9%	85.4%	85.9%	85.9%	85.9%	85.9%	85.9%	85.9%	85.9%	85.9%	85.9%
Revenue per Employee	145.8	134.9	134.2	149.5	149.5	153.3	158.6	164.6	171.1	178.4	186.4	195.3
Productivity Adjustment					0.00%	2.50%	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%
Average Cost per Employee <b>(in EURk)</b>	56.7	53.4	53.0	61.2	63.6	66.0	68.5	70.8	73.1	75.2	77.3	79.3
Average Cost per Employee Adjusted					3.9%	3.9%	3.7%	3.4%	3.2%	3.0%	2.7%	2.6%
<b>Average Cost Increase per Employee weighted by FME's Share of Employees by Region:</b>					<b>3.9%</b>	<b>3.9%</b>	<b>3.7%</b>	<b>3.4%</b>	<b>3.2%</b>	<b>3.0%</b>	<b>2.7%</b>	<b>2.6%</b>
Europe					3.5%	3.5%	3.2%	2.9%	2.6%	2.3%	2.0%	2.0%
North America					4.5%	4.5%	4.5%	4.2%	3.9%	3.6%	3.3%	3.0%
APAC					2.5%	2.5%	2.2%	2.0%	2.0%	2.0%	2.0%	2.0%
Latin America					2.5%	2.5%	2.2%	2.0%	2.0%	2.0%	2.0%	2.0%
<b>Share of FME's Employees by Region</b>												
EMEA	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
North America	50%	50%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%
APAC	10%	10%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Latin America	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Corporate	14%	14%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%

Sources: FME Annual Report, Own Illustration

Other cost of sales, among other components, are related to the vertical integration approach of FME of utilizing own products in their dialysis clinics and is assumed to be flat (15.7% of total sales) as management does not provide in-depth information on this line item.

Table 44 Other Cost of Sale Forecast

Other Cost of Sale (EURm)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
Other Cost of Sale	(2,232)	(2,349)	(2,730)	(3,046)	(3,180)	(3,420)	(3,578)	(3,740)	(3,909)	(4,083)	(4,270)	(4,440)
as % of Revenue	12.8%	13.2%	15.5%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%

Sources: FME Annual Report, Own Illustration

## Appendix 16 - SG&A Forecast

With FME being immensely exposed towards the regulatory environment and legislation in its core market, the US, the company supports US ballot initiatives. This expenditure is expected to move in election period waves. FME also communicated with its shareholders investments in the organisation for rebuilding purposes of up to EUR 650mio by 2025, related to its transformation program. Major parts of these costs are expected to incur in FY23E as the company underwent a reorganisation in terms of governance and reporting structure resulting in post implementation cost. Cost of personnel in administration, sales, and marketing functions is estimated similar to the prior described approach in cost of sales but with higher reliance on Europe and North America as the company's core corporate headquarters are located in these regions. Other (operative and non-operative) SG&A expenses are relatively flat (as % of sales) with minor adjustments for the cost saving initiatives of FME. Noteworthy, governmental reimbursements as part of the economic assistance programs to address Covid-19 consequences (EUR 49m) will no longer be provided.

Table 45 SG&A Forecast

SG&A Expenses (EURm)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
<b>SG&amp;A Expenses</b>	<b>(3,032)</b>	<b>(3,134)</b>	<b>(3,096)</b>	<b>(3,785)</b>	<b>(3,887)</b>	<b>(3,965)</b>	<b>(4,036)</b>	<b>(4,137)</b>	<b>(4,328)</b>	<b>(4,491)</b>	<b>(4,599)</b>	<b>(4,794)</b>
Costs related to US Ballot Initiatives as % of Sales	- 0.0%	(26) 0.1%	- 0.0%	(23) 0.1%	(32) 0.2%	(29) 0.1%	- 0%	(29) 0.1%	(57) 0.2%	(59) 0.2%	- 0%	(50) 0.2%
Restructuring activities as % of Sales	(92) 0.5%	- 0.0%	(63) 0.4%	(190) 1.0%	(203) 1.0%	(109) 0.5%	(91) 0.4%	- 0.0%	- 0.0%	- 0.0%	- 0.0%	- 0.0%
Personnel Expenses Administration	(660)	(715)	(701)	(744)	(804)	(871)	(906)	(937)	(963)	(984)	(1,004)	(1,017)
Headcount Administration Share of Total Employees	11,634 9.7%	13,386 10.1%	13,216 10.1%	12,166 9.4%	12,701 9.4%	13,327 9.4%	13,474 9.4%	13,571 9.4%	13,640 9.4%	13,668 9.4%	13,677 9.4%	13,577 9.4%
Average Cost per Employee (EURk)	57	53	53	61	63	65	67	69	71	72	73	75
<b>Average Cost Increase per Employee weighted by FME's Share of Employees by Region:</b>					<b>3.5%</b>	<b>3.2%</b>	<b>2.9%</b>	<b>2.6%</b>	<b>2.3%</b>	<b>2.0%</b>	<b>2.0%</b>	<b>2.0%</b>
Germany					3.5%	3.2%	2.9%	2.6%	2.3%	2.0%	2.0%	2.0%
US					3.5%	3.2%	2.9%	2.6%	2.3%	2.0%	2.0%	2.0%
% of Admin. Personnel located in Germany					50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Personnel Expenses Sales and Marketing	(185)	(218)	(246)	(298)	(322)	(349)	(363)	(375)	(386)	(395)	(403)	(408)
Headcount Sales and Marketing Share of Total Employees	3,253 2.7%	4,085 3.1%	4,648 3.5%	4,877 3.8%	5,091 3.8%	5,343 3.8%	5,401 3.8%	5,440 3.8%	5,468 3.8%	5,479 3.8%	5,483 3.8%	5,443 3.8%
Cost per Employee (EURk)	57	53	53	61	63	65	67	69	71	72	73	75
Other SG&A expenses as % of Sales	(2,239) 12.8%	(2,031) 11.4%	(2,036) 11.6%	(2,462) 12.7%	(2,455) 12.1%	(2,553) 11.7%	(2,603) 11.4%	(2,721) 11.4%	(2,844) 11.4%	(2,971) 11.4%	(3,106) 11.4%	(3,230) 11.4%
Other (Non- Operative SG&A) as % of Sales	144 -0.8%	(144) 0.8%	(50) 0.3%	(67) 0.3%	(70) 0.35%	(54) 0.2%	(72) 0.3%	(75) 0.3%	(79) 0.3%	(82) 0.3%	(86) 0.3%	(89) 0.3%

Sources: FME Annual Report, Own Estimates

## Appendix 17 - R&D Forecast

R&D expenses are fully attributable to the product segment and are forecasted to highlight on the personnel side the same assumptions as the production and services employees (R&D staff is located globally and experiences similar wage tendencies) and on the other expense side, to face FME's cost cutting measures in line with its communicated goal to shareholders of rationalizing R&D and reaching total saving of EUR 650m (the savings amount is not apply exclusively to R&D, but to the overall company). Therefore, other R&D expenses are forecasted to decline by -0.3% (starting from 3.9% of product sales in FY22A) by FY25E and remain at 3% of product sales afterwards. The decreased expenditure even though it is only small relative to the absolute R&D costs can potentially impact FME's long-term competitive advantage in product innovation and advanced quality.

Table 46 R&D Expense Forecast

R&D Expenses (EURm)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
<b>R&amp;D Expenses</b>	<b>(168)</b>	<b>(194)</b>	<b>(221)</b>	<b>(229)</b>	<b>(238)</b>	<b>(245)</b>	<b>(243)</b>	<b>(255)</b>	<b>(266)</b>	<b>(278)</b>	<b>(290)</b>	<b>(302)</b>
R&D Personnel Expense	(60)	(66)	(66)	(75)	(81)	(89)	(93)	(97)	(100)	(104)	(107)	(108)
R&D Employees	1,050	1,242	1,245	1,226	1,280	1,343	1,358	1,368	1,375	1,377	1,378	1,368
Share of Total Employees	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
Cost per Employee (EURk)	56.7	53.4	53.0	61.2	63.6	66.0	68.5	70.8	73.1	75.2	77.3	79.3
Other R&D Cost	(108)	(127)	(155)	(154)	(157)	(156)	(150)	(158)	(166)	(174)	(183)	(193)
as % of Product Sales	3.0%	3.4%	4.1%	3.9%	3.6%	3.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

Sources: FME Annual Report, Own Illustration

## Appendix 18 - Income from Associated Companies Forecast

This line item was forecasted using the average historical ROE of ~11% (income from associated companies on investments in associated companies), multiplied by the future book value of investments in associated companies.

Table 47 Income from Associated Companies Forecast

Income from Assoc. Comp. (EURm)	Historicals				Explicit Forecast							
	2019A	2020A	2021A	2022A	2023	2024	2025	2026	2027	2028	2029	2030
<b>Income from Associated Companies</b>	<b>74</b>	<b>95</b>	<b>92</b>	<b>67</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>
Investment in Associated Companies	697	761	787	774	774	774	774	774	774	774	774	774
Income from Associated Companies as % of Investment	10.6%	12.4%	11.7%	8.6%	10.8%	10.8%	10.8%	10.8%	10.8%	10.8%	10.8%	10.8%

Sources: FME Annual Report, Own Illustration

## Appendix 19 – Historical and Forecasted Income Statement

Table 48 Historical and Forecasted Income Statement

Income Statement EUR (m)	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
<b>Total Revenue</b>	<b>17,859.1</b>	<b>17,618.7</b>	<b>19,398.0</b>	<b>20,250.5</b>	<b>21,781.1</b>	<b>22,790.8</b>	<b>23,816.9</b>	<b>24,894.5</b>	<b>26,006.1</b>	<b>27,193.7</b>	<b>28,277.3</b>
<i>Growth</i>	2.2%	-1.3%	10.1%	4.4%	7.6%	4.6%	4.5%	4.5%	4.5%	4.6%	4.0%
Revenue											
<b>ofw Healthcare Services</b>	<b>14,114.4</b>	<b>13,876.3</b>	<b>15,418.1</b>	<b>15,937.0</b>	<b>17,097.7</b>	<b>17,838.5</b>	<b>18,611.3</b>	<b>19,429.1</b>	<b>20,262.6</b>	<b>21,143.8</b>	<b>21,895.2</b>
<i>% of Total Revenue</i>	79.0%	78.8%	79.5%	78.7%	78.5%	78.3%	78.1%	78.0%	77.9%	77.8%	77.4%
<b>ofw Healthcare Products</b>	<b>3,744.7</b>	<b>3,742.4</b>	<b>3,979.9</b>	<b>4,313.5</b>	<b>4,683.4</b>	<b>4,952.3</b>	<b>5,205.5</b>	<b>5,465.4</b>	<b>5,743.6</b>	<b>6,049.8</b>	<b>6,382.1</b>
<i>% of Total Revenue</i>	21.0%	21.2%	20.5%	21.3%	21.5%	21.7%	21.9%	22.0%	22.1%	22.2%	22.6%
<b>Cost of Sales</b>	<b>(12,321.6)</b>	<b>(12,541.7)</b>	<b>(14,087.8)</b>	<b>(14,314.9)</b>	<b>(16,075.9)</b>	<b>(16,855.0)</b>	<b>(17,613.2)</b>	<b>(18,369.5)</b>	<b>(19,064.9)</b>	<b>(19,767.8)</b>	<b>(20,344.5)</b>
<i>as % of Revenue</i>	69.0%	71.2%	72.6%	70.7%	73.8%	74.0%	74.0%	73.8%	73.3%	72.7%	71.9%
Cost of Sales											
<b>Gross Profit</b>	<b>5,537.4</b>	<b>5,077.0</b>	<b>5,310.3</b>	<b>5,935.6</b>	<b>5,705.2</b>	<b>5,935.8</b>	<b>6,203.6</b>	<b>6,524.9</b>	<b>6,941.2</b>	<b>7,425.9</b>	<b>7,932.8</b>
<i>Gross Profit Margin</i>	31.0%	28.8%	27.4%	29.3%	26.2%	26.0%	26.0%	26.2%	26.7%	27.3%	28.1%
OpEx	(3,327.6)	(3,316.9)	(4,013.3)	(4,124.5)	(4,209.6)	(4,279.2)	(4,391.9)	(4,594.0)	(4,768.5)	(4,889.4)	(5,095.9)
<i>as % of Revenue</i>	19%	19%	21%	20.37%	19.33%	18.8%	18.4%	18.5%	18.3%	18.0%	18.0%
<b>EBIT</b>	<b>2,209.9</b>	<b>1,760.1</b>	<b>1,297.0</b>	<b>1,811.1</b>	<b>1,495.7</b>	<b>1,656.6</b>	<b>1,811.7</b>	<b>1,930.9</b>	<b>2,172.7</b>	<b>2,536.5</b>	<b>2,837.0</b>
<i>EBIT Margin</i>	12%	10%	6.7%	9%	7%	7%	8%	8%	8%	9.3%	10.0%
D&A	(1,785.9)	(1,623.7)	(1,838.4)	(1,817.7)	(1,963.0)	(2,117.0)	(2,278.0)	(2,446.3)	(2,622.1)	(2,805.9)	(2,482.2)
<b>EBITDA</b>	<b>3,995.8</b>	<b>3,383.8</b>	<b>3,135.4</b>	<b>3,628.8</b>	<b>3,458.6</b>	<b>3,773.6</b>	<b>4,089.7</b>	<b>4,377.2</b>	<b>4,794.9</b>	<b>5,342.4</b>	<b>5,319.1</b>
<i>EBITDA Margin</i>	22%	19%	16%	18%	16%	17%	17%	18%	18%	20%	19%
<b>EBT</b>	<b>1,936.4</b>	<b>1,571.9</b>	<b>1,219.3</b>	<b>1,590.6</b>	<b>1,250.4</b>	<b>1,416.6</b>	<b>1,567.2</b>	<b>1,698.2</b>	<b>1,958.3</b>	<b>2,309.3</b>	<b>2,624.6</b>
<i>EBT Margin</i>	11%	9%	6%	8%	6%	6%	7%	7%	8%	8%	9%
<b>Net Income</b>	<b>1,435.8</b>	<b>1,219.0</b>	<b>894.3</b>	<b>1,166.7</b>	<b>917.1</b>	<b>1,039.1</b>	<b>1,149.5</b>	<b>1,245.6</b>	<b>1,436.4</b>	<b>1,693.8</b>	<b>1,925.1</b>
<i>Net Income Margin</i>	8%	7%	5%	6%	4%	5%	5%	5%	6%	6%	7%
ofw attr. to owners of parent comp.	1,164.4	969.3	673.4	878.5	690.6	782.4	865.6	937.9	1,081.6	1,275.4	1,449.6
<i>as % of Net Income</i>	81%	80%	75%	75%	75%	75%	75%	75%	75%	75%	75%
ofw non-controlling interest	271.5	249.7	220.9	288.2	226.6	256.7	284.0	307.7	354.8	418.4	475.5
<i>as % of Net Income</i>	19%	20%	25%	25%	25%	25%	25%	25%	25%	25%	25%

Sources: FME Annual Report 2020-2022, Own Assumptions

## Appendix 20 – Historical and Forecasted Balance Sheet

Table 49 Historical and Forecasted Balance Sheet

Balance Sheet EUR (m)	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Deferred Tax Assets (DTA)	351.2	315.4	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7
Accounts Receivable	3,244.5	3,571.4	3,714.3	3,803.0	4,060.6	4,217.6	4,374.9	4,538.7	4,705.7	4,883.4	5,039.2
Inventory	1,895.3	2,038.0	2,296.2	2,202.1	2,473.0	2,592.8	2,709.4	2,825.8	2,932.7	3,040.9	3,129.6
Other Current Assets	1,054.0	876.2	919.1	919.1	919.1	919.1	919.1	919.1	919.1	919.1	919.1
Deferred Tax Liabilities (DTL)	(785.9)	(868.5)	(936.5)	(936.5)	(936.5)	(936.5)	(936.5)	(936.5)	(936.5)	(936.5)	(936.5)
Accounts Payables	(827.4)	(857.5)	(931.3)	(908.9)	(1,064.7)	(1,162.5)	(1,263.0)	(1,367.6)	(1,471.6)	(1,580.0)	(1,681.8)
Provisions and other Current Liab.	(2,767.9)	(2,998.2)	(2,687.8)	(2,687.8)	(2,687.8)	(2,687.8)	(2,687.8)	(2,687.8)	(2,687.8)	(2,687.8)	(2,687.8)
Current Tax Payables	(118.4)	(137.8)	(143.9)	(143.9)	(143.9)	(143.9)	(143.9)	(143.9)	(143.9)	(143.9)	(143.9)
LT Prov. & other Non-Current Liab.	(677.5)	(191.8)	(196.9)	(196.9)	(196.9)	(196.9)	(196.9)	(196.9)	(196.9)	(196.9)	(196.9)
Non- Current Tax Payables	(78.9)	(36.5)	(27.3)	(27.3)	(27.3)	(27.3)	(27.3)	(27.3)	(27.3)	(27.3)	(27.3)
<b>Non- Cash Working Capital</b>	<b>1,289.0</b>	<b>1,710.7</b>	<b>2,318.6</b>	<b>2,335.5</b>	<b>2,708.2</b>	<b>2,887.3</b>	<b>3,060.6</b>	<b>3,236.2</b>	<b>3,406.2</b>	<b>3,583.6</b>	<b>3,726.3</b>
PP&E	4,056.9	4,235.0	4,152.7	4,135.3	4,113.2	4,062.7	3,981.5	3,868.4	3,721.3	3,539.8	3,539.8
RoU Assets	4,129.9	4,316.4	4,187.1	4,169.6	4,147.3	4,096.4	4,014.5	3,900.5	3,752.2	3,569.2	3,569.2
Intangible Assets	1,381.0	1,459.4	1,518.7	1,513.5	1,506.8	1,491.7	1,467.4	1,433.6	1,389.5	1,335.2	1,335.2
Goodwill	12,958.7	14,361.6	15,791.2	15,791.2	15,791.2	15,791.2	15,791.2	15,791.2	15,791.2	15,791.2	15,791.2
Other Non-Current Assets	775.0	924.6	814.6	814.6	814.6	814.6	814.6	814.6	814.6	814.6	814.6
<b>Fixed Assets</b>	<b>23,301.5</b>	<b>25,297.1</b>	<b>26,464.3</b>	<b>26,424.1</b>	<b>26,373.0</b>	<b>26,256.6</b>	<b>26,069.3</b>	<b>25,808.2</b>	<b>25,468.9</b>	<b>25,050.0</b>	<b>25,050.0</b>
<b>Core Capital Employed</b>	<b>24,590.5</b>	<b>27,007.8</b>	<b>28,782.8</b>	<b>28,759.6</b>	<b>29,081.2</b>	<b>29,143.9</b>	<b>29,129.9</b>	<b>29,044.4</b>	<b>28,875.1</b>	<b>28,633.5</b>	<b>28,776.3</b>
Investment in Associated Companies	761.1	786.9	773.7	773.7	773.7	773.7	773.7	773.7	773.7	773.7	773.7
Employee Severance	(44.7)	(155.4)	(149.1)	(139.1)	(129.1)	(119.1)	(109.1)	(99.1)	(89.1)	(79.1)	(69.1)
Put Option Liabilities	(882.4)	(992.4)	(1,468.5)	(1,468.5)	(1,468.5)	(1,468.5)	(1,468.5)	(1,468.5)	(1,468.5)	(1,468.5)	(1,468.5)
Variable Payments Outst. for Acqui.	(47.0)	(38.0)	(33.1)	(31.1)	(29.1)	(27.1)	(25.1)	(23.1)	(21.1)	(19.1)	(17.1)
Pension Provisions	(718.5)	(782.6)	(514.2)	(514.2)	(514.2)	(514.2)	(514.2)	(514.2)	(514.2)	(514.2)	(514.2)
<b>Surplus Assets</b>	<b>(931.6)</b>	<b>(1,181.5)</b>	<b>(1,391.1)</b>	<b>(1,379.1)</b>	<b>(1,367.1)</b>	<b>(1,355.1)</b>	<b>(1,343.1)</b>	<b>(1,331.1)</b>	<b>(1,319.1)</b>	<b>(1,307.1)</b>	<b>(1,295.1)</b>
<b>Net Capital Employed</b>	<b>23,658.9</b>	<b>25,826.2</b>	<b>27,391.7</b>	<b>27,380.5</b>	<b>27,714.1</b>	<b>27,788.8</b>	<b>27,786.7</b>	<b>27,713.3</b>	<b>27,555.9</b>	<b>27,326.4</b>	<b>27,481.1</b>
Current Borrowings	1,087.6	1,923.8	1,363.1	713.8	1,215.0	1,306.9	1,367.4	1,429.0	1,493.7	1,560.4	1,903.6
Current Leases	609.2	661.6	673.8	703.4	756.6	791.7	827.3	864.8	903.4	944.6	982.3
Non- Current Borrowings	6,800.1	6,646.9	7,170.7	7,170.7	6,702.7	6,204.4	4,320.2	3,551.0	3,551.0	2,391.3	1,644.9
Non- Current Lease Liabilities	3,883.1	4,087.8	4,004.9	4,180.9	4,497.0	4,705.4	4,917.3	5,139.7	5,369.3	5,614.4	5,838.2
Other Interest Bearing Liabilities	29.1	8.7	3.7	3.9	4.2	4.4	4.6	4.8	5.0	5.2	5.4
<b>Gross Financial Debt</b>	<b>12,409.1</b>	<b>13,328.8</b>	<b>13,216.3</b>	<b>12,772.8</b>	<b>13,175.4</b>	<b>13,012.7</b>	<b>11,436.7</b>	<b>10,989.3</b>	<b>11,322.3</b>	<b>10,515.9</b>	<b>10,374.3</b>
Cash and Cash Equivalents	(1,081.5)	(1,481.7)	(1,273.8)	(1,391.4)	(1,678.4)	(1,817.3)	(648.9)	(703.8)	(1,677.4)	(1,631.8)	(1,843.8)
<b>Net Debt</b>	<b>11,327.6</b>	<b>11,847.2</b>	<b>11,942.5</b>	<b>11,381.4</b>	<b>11,497.1</b>	<b>11,195.4</b>	<b>10,787.9</b>	<b>10,285.5</b>	<b>9,644.9</b>	<b>8,884.1</b>	<b>8,530.5</b>
Ordinary Shares	292.9	293.0	293.4	293.4	293.4	293.4	293.4	293.4	293.4	293.4	293.4
Capital Reserves	2,872.6	2,891.3	3,372.8	3,372.8	3,372.8	3,372.8	3,372.8	3,372.8	3,372.8	3,372.8	3,372.8
Retained Earnings	10,254.9	10,826.1	10,711.7	11,261.6	11,479.5	11,855.9	12,261.4	12,690.3	13,173.5	13,704.8	14,213.1
Cumulated OCI	(2,205.3)	(1,311.6)	(388.5)	(388.5)	(388.5)	(388.5)	(388.5)	(388.5)	(388.5)	(388.5)	(388.5)
<b>Group Equity</b>	<b>11,215.1</b>	<b>12,698.8</b>	<b>13,989.5</b>	<b>14,539.3</b>	<b>14,757.3</b>	<b>15,133.6</b>	<b>15,539.1</b>	<b>15,968.1</b>	<b>16,451.3</b>	<b>16,982.6</b>	<b>17,490.9</b>
Equity Attributable to non-contr. Int.	1,116.2	1,280.3	1,459.7	1,459.7	1,459.7	1,459.7	1,459.7	1,459.7	1,459.7	1,459.7	1,459.7
<b>Total Equity</b>	<b>12,331.3</b>	<b>13,979.0</b>	<b>15,449.2</b>	<b>15,999.1</b>	<b>16,217.0</b>	<b>16,593.3</b>	<b>16,998.8</b>	<b>17,427.8</b>	<b>17,911.0</b>	<b>18,442.3</b>	<b>18,950.6</b>
<b>Total Funds Invested</b>	<b>23,658.9</b>	<b>25,826.2</b>	<b>27,391.7</b>	<b>27,380.5</b>	<b>27,714.1</b>	<b>27,788.8</b>	<b>27,786.7</b>	<b>27,713.3</b>	<b>27,555.9</b>	<b>27,326.4</b>	<b>27,481.1</b>

Sources: FME Annual Report 2020-2022, Own Assumptions

## Appendix 21 – Interest Expense & Income Forecast

Table 50 Interest Expense & Income Forecast

Interest Expense & Income in EURm	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
<b>Total Debt</b>	13,097.4	13,158.8	13,215.9	12,348.6	11,343.1	11,290.0	11,062.4	10,575.9
<b>(Average of BOP and EOP)</b>								
<b>Interest on Debt</b>	(371.9)	(396.7)	(391.4)	(396.0)	(384.2)	(365.8)	(378.6)	(363.8)
Effective Interest Rate on Debt	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
<b>Interest Expense on Bonds</b>	<b>(153.8)</b>	<b>(152.2)</b>	<b>(134.7)</b>	<b>(127.2)</b>	<b>(103.7)</b>	<b>(74.7)</b>	<b>(74.7)</b>	<b>(51.1)</b>
Effective Interest Rate on Bonds								
<b>Interest Expense on Lease Liabilities</b>	<b>(158.0)</b>	<b>(169.9)</b>	<b>(177.8)</b>	<b>(185.8)</b>	<b>(194.2)</b>	<b>(202.9)</b>	<b>(212.1)</b>	<b>(220.6)</b>
Effective Interest Rate on Lease Liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Interest Expense on Other Debt</b>	<b>(60.1)</b>	<b>(74.6)</b>	<b>(79.0)</b>	<b>(83.0)</b>	<b>(86.3)</b>	<b>(88.3)</b>	<b>(91.8)</b>	<b>(92.1)</b>
Effective Interest Rate on Other Debt	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Spread	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EURIBOR (3 Months)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Interest Income</b>	<b>67.7</b>	<b>67.7</b>	<b>67.7</b>	<b>67.7</b>	<b>67.7</b>	<b>67.7</b>	<b>67.7</b>	<b>67.7</b>

Sources: FME Annual Report 2022, Refinitiv Eikon, European Central Bank 2023, Own Estimates

## Appendix 22 – Historical and Forecasted Cash Flow Statements

Table 51 Historical and Forecasted Cash Flow Statement

Cash Flow Statement EUR (m)	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	2,210	1,760	1,297	1,811	1,496	1,657	1,812	1,931	2,173	2,536	2,837
(-) Operational Taxes	(571)	(395)	(346)	(483)	(399)	(442)	(483)	(515)	(579)	(676)	(756)
<b>NOPAT</b>	<b>1,639</b>	<b>1,365</b>	<b>951</b>	<b>1,328</b>	<b>1,097</b>	<b>1,215</b>	<b>1,329</b>	<b>1,416</b>	<b>1,594</b>	<b>1,860</b>	<b>2,081</b>
(+) D&A	1,786	1,624	1,838	1,818	1,963	2,117	2,278	2,446	2,622	2,806	2,482
(+/-) Changes in NCWC	1,070	(422)	(608)	(17)	(373)	(179)	(173)	(176)	(170)	(177)	(143)
(-) Net CapEx	(376)	(3,619)	(3,006)	(1,778)	(1,912)	(2,001)	(2,091)	(2,185)	(2,283)	(2,387)	(2,482)
<b>FCFF</b>	<b>4,119</b>	<b>(1,052)</b>	<b>(824)</b>	<b>1,352</b>	<b>775</b>	<b>1,152</b>	<b>1,343</b>	<b>1,502</b>	<b>1,763</b>	<b>2,102</b>	<b>1,938</b>
Tax Shields	71	42	21	59	65	64	65	62	57	61	57
Net Interest Expenses/ Income	(368)	(280)	(292)	(304)	(329)	(324)	(328)	(317)	(298)	(311)	(296)
Income from Associated Companies	95	92	67	84	84	84	84	84	84	84	84
Delta Gross Debt	(1,399)	920	(113)	(444)	403	(163)	(1,576)	(447)	333	(806)	(142)
Delta Surplus Assets	(111)	250	210	(12)	(12)	(12)	(12)	(12)	(12)	(12)	(12)
Gain from InterWell Health Acquisition	-	-	148	-	-	-	-	-	-	-	-
<b>FCFE</b>	<b>2,406</b>	<b>(29)</b>	<b>(784)</b>	<b>734</b>	<b>986</b>	<b>802</b>	<b>(424)</b>	<b>872</b>	<b>1,927</b>	<b>1,117</b>	<b>1,629</b>
Dividends	(351)	(392)	(396)	(329)	(473)	(406)	(460)	(509)	(598)	(744)	(941)
Dividends Attributable to	-	-	-	(288)	(227)	(257)	(284)	(308)	(355)	(418)	(476)
Minority Interest (FY23E onwards)											
Delta in Other Equity	(1,827)	657	792	(0)	0	0	(0)	0	0	0	(0)
Delta Minority Interest	(153)	164	179	-	-	-	-	-	-	-	-
<b>Net Changes in Cash</b>	<b>74</b>	<b>400</b>	<b>(208)</b>	<b>118</b>	<b>287</b>	<b>139</b>	<b>(1,168)</b>	<b>55</b>	<b>974</b>	<b>(46)</b>	<b>212</b>

Sources: Own Estimates

## Appendix 23 - Synthetic Credit Rating based on Damodaran's Information

The probability of default for FME is based on its ISCR of 3.6x in FY22A, leading to a default spread of 1.62%. The overall credit rating slightly diverges from it, with a Fitch Rating of BBB- (still investment Grade).

Table 52 Synthetic Credit Rating

>	≤ to	Rating is	Spread is
-100000	0.199999	D2/D	20.00%
0.2	0.649999	C2/C	17.50%
0.65	0.799999	Ca2/CC	15.78%
0.8	1.249999	Caa/CCC	11.57%
1.25	1.499999	B3/B-	7.37%
1.5	1.749999	B2/B	5.26%
1.75	1.999999	B1/B+	4.55%
2	2.249999	Ba2/BB	3.13%
2.25	2.499999	Ba1/BB+	2.42%
2.5	2.999999	Baa2/BBB	2.00%
3	4.249999	A3/A-	1.62%
4.25	5.499999	A2/A	1.42%
5.5	6.499999	A1/A+	1.23%
6.5	8.499999	Aa2/AA	0.85%
8.50	100000	Aaa/AAA	0.69%

Source: Damodaran 2023

Table 53 FME's Outstanding Public Bonds

Description	Book Value	Amount Outstanding	Maturity Date	Weighting	Weighted Maturity	Coupon	Coupon Class	Yield	Last Price	Market Value of Debt
FMEG 0.250 29-Nov-2023 '23	649,283,000	650,000,000	29-Nov-2023	8.8%	0.1	0.3%	Fixed Coupon	4%	98.084	637,546,000
FMEGU / FMEG 4.750 15-Oct-2024 '24	374,354,000	368,731,563	15-Okt-2024	5.1%	0.1	4.8%	Fixed Coupon	5%	99.5	366,887,905
FMEG 1.500 11-Jul-2025 '25	498,245,000	500,000,000	11-Jul-2025	6.7%	0.2	1.5%	Fixed Coupon	4%	95.898	479,490,000
FMEG 1.000 29-May-2026 '26	497,175,000	500,000,000	29-Mai-2026	6.7%	0.3	1.0%	Fixed Coupon	4%	92.903	464,515,000
FMEG 0.625 30-Nov-2026 '26	596,158,000	600,000,000	30-Nov-2026	8.1%	0.3	0.6%	Fixed Coupon	4%	90.378	542,268,000
FMEGS / FMEG 1.875 01-Dec-2026 '26	790,926,000	783,554,572	01-Dec-2026	10.7%	0.4	1.9%	Fixed Coupon	6%	87.318	684,184,965
FMEG 3.875 20-Sep-2027 '27	744,497,000	750,000,000	20-Sep-2027	10.1%	0.5	3.9%	Fixed Coupon	4%	98.875	741,562,500
FMEGS / FMEG 3.750 15-Jun-2029 '29	462,005,000	460,914,454	15-Jun-2029	6.3%	0.4	3.8%	Fixed Coupon	6%	87.44	403,023,599
FMEG 1.250 29-Nov-2029 '29	497,781,000	500,000,000	29-Nov-2029	6.7%	0.5	1.3%	Fixed Coupon	4%	83.396	416,980,000
FMEG 1.500 29-May-2030 '30	746,332,000	750,000,000	29-Mai-2030	10.1%	0.8	1.5%	Fixed Coupon	4%	83.208	624,060,000
FMEGS / FMEG 2.375 16-Feb-2031 '31	930,443,000	921,828,909	16-Feb-2031	12.6%	1.1	2.4%	Fixed Coupon	6%	77.375	713,265,118
FMEGS / FMEG 3.000 01-Dec-2031 '31	602,166,000	599,188,791	01-Dec-2031	8.1%	0.7	3.0%	Fixed Coupon	6%	79.006	473,392,100
<b>Total</b>	<b>7,389,365,000</b>	<b>7,384,218,289</b>		<b>100%</b>	<b>5.5</b>					<b>6,547,175,187</b>

Source: Refinitiv Eikon

## Appendix 24 - Beta Regression

Table 54 Beta Regression Output FMEG.DE on STOXX Europe 600 Health Care (in EUR)

Regression Statistics	
Multiple R	0.527666927
R Square	0.278432386
Adjusted R Square	0.274929631
Standard Error	0.03445327
Observations	208

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.094356283	0.094356	79.48953	2.62664E-16
Residual	206	0.244527726	0.001187		
Total	207	0.338884009			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.004664085	0.002395655	-1.94689	0.052907	-0.009387231	5.90595E-05	-0.009387231	5.90595E-05
X Variable 1	<b>0.968309047</b>	0.108607301	8.91569	2.63E-16	0.754184685	1.18243341	0.754184685	1.18243341

Sources: Refinitiv, Own Calculation

Table 55 Beta Regression Output FMS.N on Dow Jones Industrial (in USD)

Regression Statistics	
Multiple R	0.50040738
R Square	0.250407546
Adjusted R Square	0.246768748
Standard Error	0.037897243
Observations	208

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.098833609	0.098833609	68.81600017	1.39994E-14
Residual	206	0.295857408	0.001436201		
Total	207	0.394691017			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.004915479	0.002633771	-1.866326922	0.063416768	-0.010108082	0.000277125	-0.010108082	0.000277125
X Variable 1	<b>0.870684396</b>	0.104958121	8.295540981	1.39994E-14	0.663754561	1.07761423	0.663754561	1.07761423

Sources: Refinitiv, Own Calculation

The two betas are then weighted according to the shareholder structure by country by percentage ownership in FME.

Shareholders in Europe have been assigned the FMEG.DE beta, North American shareholders (e.g., Canadian shareholders) have been assigned the FMS.N beta. For shareholders located in the rest of the world, an equal weighted beta of FMEG.DE and FMS.N beta is applied.

The weighting is conducted as highlighted in the following table.

Table 56 Beta Weighting

Ownership by Country	Beta (either US or Europe)	Weight (FME's Ownership)
United States	0.871	40%
Germany	0.968	35%
United Kingdom	0.968	5%
Canada	0.871	3%
France	0.968	2%
Rest of Europe	0.968	5%
Rest of World	0.919	9%
<b>Raw Beta</b>		<b>0.92</b>

Source: Own Calculation

## Appendix 25 – Sensitivity Tables at 1% Terminal Growth

Accounting for the actual share price, the sensitivity analyses are centred around the terminal growth of 1%.

For the FCFF, the results underpin a share price between EUR 29.23 and EUR 47.88.

Table 57 Sensitivity Analysis- FCFF for FY30E at 1% Terminal Growth Rate

		Perpetual Growth Rate								
		0.02%	0.27%	0.52%	0.77%	1.02%	1.27%	1.52%	1.77%	2.02%
Wacc	5.4%	60.15 €	64.08 €	68.41 €	73.20 €	78.55 €	84.54 €	91.30 €	99.00 €	107.83 €
	5.9%	50.40 €	53.55 €	57.00 €	60.78 €	64.95 €	69.56 €	74.71 €	80.48 €	86.99 €
	6.4%	42.26 €	44.83 €	47.62 €	50.65 €	53.97 €	57.61 €	61.63 €	66.08 €	71.03 €
	6.9%	35.38 €	37.51 €	39.79 €	42.27 €	44.95 €	47.88 €	51.07 €	54.58 €	58.45 €
	7.4%	29.51 €	31.28 €	33.18 €	35.22 €	37.43 €	39.81 €	42.40 €	45.22 €	48.30 €
	7.9%	24.44 €	25.93 €	27.53 €	29.23 €	31.07 €	33.04 €	35.16 €	37.46 €	39.95 €
	8.4%	20.03 €	21.30 €	22.65 €	24.09 €	25.63 €	27.27 €	29.04 €	30.94 €	32.98 €
	8.9%	16.16 €	17.25 €	18.41 €	19.63 €	20.94 €	22.32 €	23.81 €	25.39 €	27.09 €
	9.4%	12.76 €	13.70 €	14.69 €	15.74 €	16.85 €	18.04 €	19.29 €	20.63 €	22.06 €

Source: Own Calculations

The sensitivity analysis for the APV yields a share price in the range of EUR 33.13 and EUR 49.98, thereby marking the upside for the FME's stock with the baseline assumption of a 1% terminal growth rate.

Table 58 Sensitivity Analysis- APV for FY30E at 1% Terminal Growth Rate

		Perpetual Growth Rate								
		0.02%	0.27%	0.52%	0.77%	1.02%	1.27%	1.52%	1.77%	2.02%
Cost of Equity Unlev.	6.0%	57.36 €	60.86 €	64.70 €	68.95 €	73.66 €	78.94 €	84.89 €	91.67 €	99.48 €
	6.5%	49.42 €	52.35 €	55.56 €	59.09 €	62.99 €	67.33 €	72.20 €	77.71 €	84.03 €
	7.0%	42.70 €	45.20 €	47.92 €	50.91 €	54.20 €	57.85 €	61.93 €	66.54 €	71.82 €
	7.5%	36.95 €	39.11 €	41.46 €	44.03 €	46.85 €	49.98 €	53.47 €	57.42 €	61.94 €
	8.0%	31.98 €	33.87 €	35.93 €	38.17 €	40.63 €	43.36 €	46.41 €	49.85 €	53.81 €
	8.5%	27.66 €	29.33 €	31.15 €	33.13 €	35.31 €	37.72 €	40.42 €	43.48 €	47.01 €
	9.0%	23.87 €	25.37 €	26.99 €	28.77 €	30.72 €	32.88 €	35.30 €	38.06 €	41.25 €
	9.5%	20.53 €	21.88 €	23.35 €	24.95 €	26.71 €	28.68 €	30.88 €	33.40 €	36.32 €
	10.0%	17.56 €	18.79 €	20.13 €	21.59 €	23.21 €	25.00 €	27.03 €	29.35 €	32.07 €

Source: Own Calculations

## Appendix 26 - Comparison to Credit Suisse Comparable Company Analysis

The covering equity analyst defines FME's peer group to some degree differently. Players as DaVita and Baxter International are also included, but Nipro and JMS are not considered. Instead, Fresenius, the parent company, Abbott, and Hikma Pharma are viewed as comparables. Further, the inclusion of the parent company is critical as the shareholders' expectations about

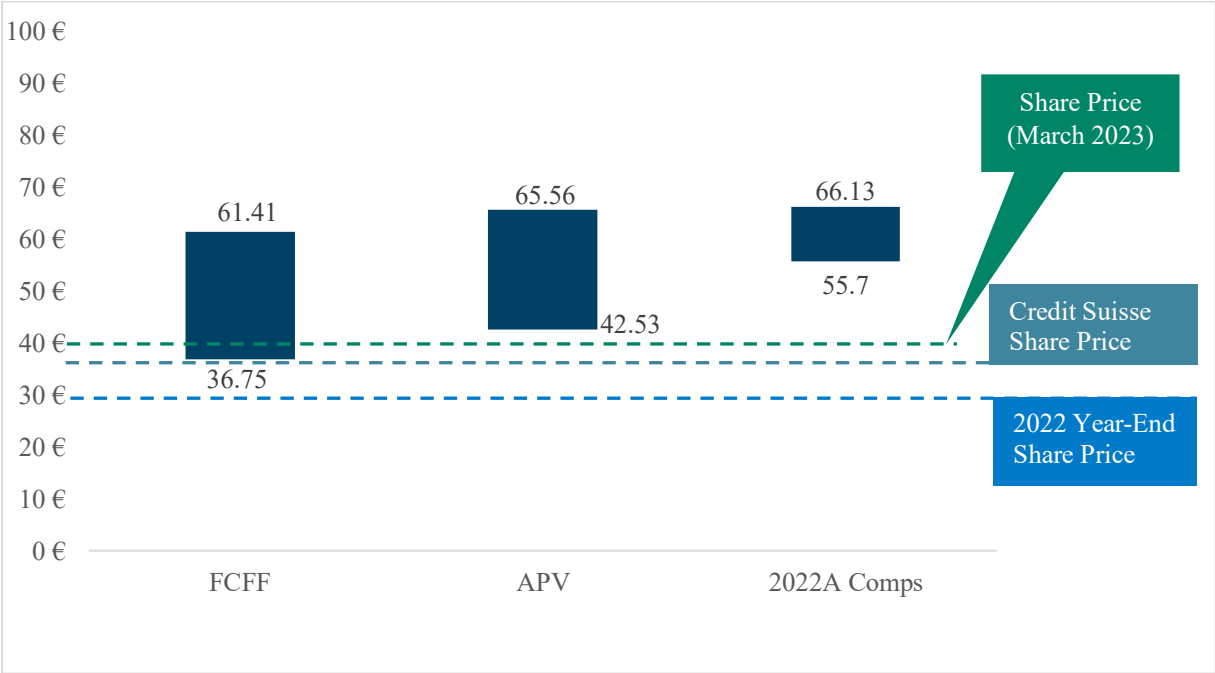
FME are an integral part of the valuation of Fresenius. This implies that synergies and the control premium of Fresenius on FME distorts valuation. Furthermore, FME is among the least profitable companies of Fresenius meaning that the financial characteristics differ. For Abbott and Hikma Pharma, the degree of exposure towards the dialysis products and services market is rather limited.

The Credit Suisse CCA yields an EV/ Sales valuation of 1.7x for 2023E, +0.2x higher than my median. The EV/EBITDA 2023E multiple is 7.5x and therewith in line with the average of my CCA. Regarding the P/E multiples, Credit Suisse estimates a multiple of 12.8x for 2023E, -0.8x lower than my median and -1.4x lower than my average.

### Appendix 27 – Football Field Valuation

The football field analysis shows a consensus among the applied valuation techniques, even though the results are different. Both, intrinsic and analogue valuations indicate a good upside for the stock. The chart further reveals how the market perception of the company has changed in the first quarter of 2023. Credit Suisse’s neutral opinion seems therefore rather underestimating.

Table 59 Football Field Valuation



Source: Credit Suisse, FME Annual Report, Own Illustration

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