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Equity Valuation Dissertation

Atlas Copco AB

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Abstract

This Dissertation presents a literature review of some of the most appraised theories on equity valuation models. A thoughtful analysis is made, presenting the main advantages and restrictions of each model and setting the path for a discussion about improvements to be made on this field of study.

A practical implementation follows, proposing a fair value estimation of Atlas Copco AB shares. Atlas Copco is a Swedish-based capital goods company, operating across four different segments: Compressor Technique, Industrial Technique, Mining and Rock Excavation Technique and Construction Technique.

The models initially used are the Discounted Cash Flow model, the Relative Valuation model and the Economic Profit model. The Relative Valuation model proves incapable of capturing Atlas Copco's high invested capital profitability therefore not integrating the final value estimation. The Discounted Cash Flow and Economic Profit models point to a valuation of between SEK 267 and SEK 276 *per* share.

Finally, an interesting comparison is made with an analogous Investment Research Report, produced by Credit Suisse. Highlighting the major differences in valuation assumptions and methodology, the reader is shown how an equity valuation exercise can be subject to different approaches and yield dissimilar results.

Abstrato

Esta dissertação apresenta uma revisão bibliográfica das principais teorias propostas sobre modelos de avaliação de empresas. É feita uma análise crítica, discorrendo sobre as principais vantagens e restrições de cada modelo, abrindo espaço à discussão sobre possíveis melhorias a implementar neste ramo de estudo.

Segue-se uma implementação prática da teoria exposta, propondo a avaliação das ações da Atlas Copco AB. A Atlas Copco é uma empresa sueca que opera no setor dos bens de capital, dividida pelos seguintes segmentos: Técnicas de Compressão, Técnicas Industriais, Técnica de Minas e Escavação; e Técnicas de Construção.

Os modelos inicialmente propostos são o modelo de Fluxos de Caixa Descontados, o modelo de Avaliação Relativa e o modelo de Lucro Económico. O modelo de Avaliação Relativa demonstra-se incapaz de capturar a alta rentabilidade de capitais investidos da Atlas Copco, pelo que não integrará a estimativa final do valor da empresa. Os modelos de Fluxos de Caixa Descontados e de Lucro Económico apontam para uma valorização de entre SEK 267 e SEK 276, por ação.

Finalmente, é proposta uma interessante comparação com um Relatório de Investimento análogo, produzido pelo Credit Suisse. Destacando as principais diferenças nos pressupostos de avaliação e metodologia, é mostrado ao leitor como a avaliação de uma empresa está sujeita a diferentes abordagens, que podem culminar em estimativas diferentes.

Acknowledgments

This is the culmination of a risky two-year journey, powered by the idea that it is never too late to follow one's dreams. Now that it is about to end, it is time to show my gratitude towards those who have put in their share of sacrifice to make it happen:

To Professor José Tudela Martins, thank you for your guidance and kindness, as well as for always making sure I would leave our meetings with the right tools to answer my own questions.

To my friends, thank you for keeping my spirits up and accepting my long absences.

To my aunt Manela, uncle Pedro and cousins Mariana and Pedro, thank you for welcoming me with open arms and treating me as another son and brother. One is always at home when among family.

To my Mother, Father and Brother, thank you for all the support while I chose to leave my comfort zone. Know that, wherever this journey takes me, you will always be my guiding light and safe harbor.

To my dear Ju, who bears the heaviest burden of my choices. Thank you for the unconditional support and belief. Thank you for being the perfect example of the kind of person I want to be. Thank you for everything.

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1. Literature Review

1.1 Introduction

It is a common characteristic in human beings to try to predict the future consequence of a decision being made in the present. Investors and managers also engage in such activities. The latter's main objective is to decide and implement a successful strategy for their company; the former's is to manage the financial resources available so that they are able to compound over time, while controlling the risk taken.

In order to make the right call, both need adequate tools and metrics to estimate the value of such decisions. Damodaran (2005) presents a wide set of valuation models that systematize that process. Despite the proliferation of different models, Young et al (1999) make the refreshing remark that those should just be alternative ways of incorporating and developing the same base model, thus helping in producing a more consistent and solid overall view of the problem. Luehrman (1997) synthetizes the tree crucial factors in such base model: cash generation; risk management; and decision timing.

I follow with a presentation of the most important valuation models designed so far, shedding some light on how they integrate the three factors mentioned before.

1.2 Discounted Cash Flow Model

This model determines that the value of a given company is equal to the amount of excess cash it is able to generate and distribute to its capital providers (equity holders and debt holders), during its lifetime. The amount of cash generated each year is technically named **Free Cash Flows to the Firm** (FCFF):

$$FCFF = EBIT * (1 - t^1) + Depreciation\ and\ Amortization + \Delta\ Provisions - Capital\ Expenditures - Investment\ in\ Net\ Working\ Capital$$

These cash flows are discounted back to the present at a rate equivalent to the estimated cost of capital, referred to as **Weighted Average Cost of Capital** (WACC). The final value of the company – **Enterprise Value** (EV), is thus computed according the following:

$$EV = \sum_{t=1}^{n} \frac{FCFF_t}{(1 + WACC)^t}$$

[1] *t* represents the effective corporate tax rate

If, on the other hand, the company is expected to keep operating into the foreseeable future, then an additional component needs to be taken into account.

Free Cash Flows to the Firm are estimated for a future time period (Explicit Period), up until year *n*. Beyond that, the company is assumed to reach its steady-state, when FCFF's should grow at a terminal constant growth rate (*g*). Those can be measured as a perpetuity and considered the firm's **Terminal Value** (TV). The TV is computed according to the following formula:

$$TV_n = \frac{\frac{FCFF_n * (1+g)}{WACC - g}}{(1+WACC)}$$

Damodaran (2002) proposes alternative ways to compute the terminal value of a company. One is through the estimation of its liquidation value, in which the company is assumed to close and assets are sold – terminal value would be the amount buyers are willing to offer for those assets. Another is estimating a multiple of the earnings metric of the company (net income, EBIT or Revenues), assuming the company will grow its earnings at a constant rate.

Finally, the Enterprise Value is given by the following formula:

$$EV = \sum_{t=1}^{n} \frac{FCFF_t}{(1+WACC)^t} + \frac{TV_n}{(1+WACC)^n}$$

If, alternatively, we wish only to estimate the cash flows available to equity holders, the **Free Cash Flows to Equity** (FCFE), we need to make the following adjustments to FCFF:

$$FCFE = FCFF - Interest\ Payments * (1-t) + \Delta Net\ Debt - Preferred\ Dividends$$

The sum of the FCFE will yield the estimated **Equity Value.** The same reasoning explained before applies to computing the Terminal Value in this situation. The main difference is that cash flows and terminal value are discounted at **cost of equity** (k_e):

$$Equity\ Value = \sum_{t=1}^{n} \frac{FCFE_t}{(1+k_e)^t} + \frac{TV_n}{(1+k_e)^n}$$

1.3 Cost of Capital

A company typically finances its operations through Equity and Debt – the sum of the two is called the Capital Structure of the Company. Both are provided by financial agents through investments that are expected to generate future returns.

Equity holders, or shareholders, are attributed ownership of the company and thus have a claim on the company's future profits. Debtholders are attributed the right to an interest

payment on their loan, as well as to receive the nominal amount lent, in a future date. In case the company goes bankrupt, debtholders have priority in claiming their rights and only after that is fulfilled can shareholders claim whatever is left. These fundamental differences contribute decisively for different approaches in estimating the expected return on equity - cost of equity (k_e), and on debt - cost of debt (k_d). A third way to obtain financing is through the issuance of preferred shares but these will not be addressed as they do not take part on Atlas Copco's capital structure.

The final cost of capital for the company is computed as the average of the cost of equity and debt, pondered by their relative weight in the capital structure – the Weighted Average Cost of Capital (WACC):

$$WACC = \frac{Equity}{Capital} * k_e + \left(1 - t^2\right) * \frac{Debt}{Capital} * k_d + \frac{Preferred\ Equity}{Capital} * k_p$$

An additional consideration must be made: the use of financial debt entails interest expenses that are taken into account each year, lowering Atlas Copco's taxable income. Analysts refer to this as the tax deductibility of debt – it diminishes taxes paid, thus impacting the final cost of debt, lowering it by the amount of the effective corporate tax rate.

As Luehrman (1997) astutely notes, using a constant rate to discount all cash flows makes calculations simple and efficient, but it is only adequate if the capital structure is to be assumed constant for the future. If else, an alternative valuation method ought to be used, which is discussed later in this Literature Review.

1.3.1 Cost of Equity

The cost of equity can be described as the rate of return required by shareholders. A solid way to estimate this cost is through the Capital Asset Pricing Model (CAPM). Other models include the Fama-French three factor model and the Arbitrage Pricing Theory Model and differ essentially in how risk is defined. Fama-French Model, for instance, defines risk as the stock sensitivity to three factors: the stock market, the firm size and the book-to-market value of the firm.

According to CAPM, the cost of equity is determined by three components: the return on a risk-free investment (R_f), the market-wide risk premium - represented by the excess return of the market portfolio over the risk-free investment (R_m), and an adjustment to the specific riskiness of the investment relative to the market – denominated Beta (β). The final formula for the cost of equity calculations is as follows:

$$k_e = R_f + \beta * R_m$$

[2] *t* represents the effective corporate tax rate

Risk-free rate (R_f)

Risk-free rate is usually estimated based on the market yield on a long-term sovereign debt instrument – normally, the 10-year bond. This is the best proxy to an investment with no risk associated, as countries (developed ones, at least) are attributed a very low probability of defaulting on their obligations. Analysts should always use a bond denominated in the same currency as the company's cash flows, so that inflation is modelled consistently between discount rate and cash flows.

Market Risk Premium (R_m)

There is no consensus on the best practice to measure the market risk premium, primarily because of the fact that the notion of market as a whole is unobservable. A common procedure is to identify the broader market in which the company operates - in terms of geography and firm size, and estimate what the historical excess return has been for that market. Several authors dispute this technique, among them being Fernandez (2004), arguing that the past is not a strong indicator of future performance. Even still, there is not a more consensual practice, so this is the most commonly used method.

Beta (β)

Beta represents the company-specific investment risk, as measured by its stock returns co-movement with market returns. Since this cannot be observed, it ought to be estimated. Damodaran (2002) proposes a simple regression of the stock's returns (R_i) on the market returns (R_m), as depicted by the following formula:

$$R_i = \alpha + \beta * R_m$$

This method entails one major setback: the time period and periodicity used in the regression. Too big or too small of a time period may distort the present characteristics of the company and the reality in which it operates. Shorter periodicity may yield more observations but can also add a factor of artificial volatility not related with the company's fundamental performance. Theorists' consensus is that at least 60 observations should be used for this exercise.

An alternative method is to identify the company's industry beta. Companies in the same industry are expected to face the same operating risks, so betas should be similar.

But simply using the industry's median beta overlooks the fact that leverage plays an important role, as beta is not only impacted by operating risks, but also financial risks. Thus, analysts should have the additional precaution of using the industry's capital structure (D/E) to find the industry's unlevered beta (β_u), through the following formula:

$$\beta_u = \frac{\beta_l}{(1 + \frac{D}{E})}$$

The same formula is then used with the company-specific capital structure to estimate its levered Beta.

A third alternative, if no reliable peers are known, is to adjust the regression beta by a smoothing factor originally proposed by Marshall Blume (1975). His theory rests on evidence that betas are mean-reverting, thus proposing the following formula:

$$Adjusted\ Beta = \frac{1}{3} + \frac{2}{3} * Raw\ Beta$$

1.3.2 Cost of Debt

The required rate of return for debtholders is usually estimated using two approaches: yield-to-maturity approach or a ratings approach.

The yield-to-maturity (YTM) is best used when the company's debt is traded in public markets. The cost of debt for the company must be computed as an average of the YTM of the different instruments, weighted by their participation in the company's debt structure.

Alternatively, Damodaran (2001) proposes a ratings approach, in which the analyst compares the YTM of debt instruments issued by companies with similar credit ratings to the company being analyzed. A blended average of those YTM should provide a solid proxy for the market cost of debt of the company.

1.4 Adjusted Present Value Model

One of the most commonly mentioned flaws of the Discounted Cash Flow Valuation is that its capital structure should remain constant in the foreseeable future. Luehrman (1997) makes a solid point arguing that discounting cash flows at WACC may lead to material mistakes when valuing companies with changing capital structures or tax exposure.

The Adjusted Present Value (APV) method proposes that companies' cash flows are initially valued as if they were financed entirely by equity (Unlevered Value) and then increased by the net value creation achieved by the use of debt:

$$Enterprise\ Value = Unlevered\ Value + Present\ Value\ of\ Interest\ Tax\ Shields - Present\ Value\ of\ Expected\ Bankrupcy\ Costs$$

To account for the Unlevered Value of the company, FCFF are estimated in the same way presented in the DCF Valuation section. Since we are now assuming an all-equity financed company, those FCFF must be discounted at the unlevered cost of equity (k_u).

The present value of interest tax shield (PV ITS) arises from the fact that, in most legislations around the world, interest payments are deductible for tax purposes. Using debt can thus be a source of value creation through this savings in cash flows. Several authors propose alternative ways for estimating this value, but they all propose that it should be valued as a string of future cash flows to be discounted to the present at a certain rate. Myers (1974), who is accredited with first introducing this valuation method, proposes the following formula:

$$PV\ ITS = \sum_{t=1}^{n} \frac{Debt * k_d * Effective\ Tax\ Rate_t}{(1 + k_d)^t}$$

The cost of debt is used as discount rate since the risk of these tax savings is perceived to be similar to the risk of bearing debt. Fernandez (2004) alternatively argues that in case the company is expected to increase its debt levels, the PV of interested tax shield must be computed as:

$$PV\ ITS = \sum_{t=1}^{n} \frac{Debt * k_u * Effective\ Tax\ Rate_t}{(1 + k_u)^t}$$

Finally, as the use of excessive debt may increase the risks of bankruptcy for the company, costs associated with the company not being able to repay its debt (administrative, legal, fiscal costs, etc.) must be factored in the model. A common way to estimate such cost is through the following formula:

$$Expected\ Bankrupcy\ Costs = Probability\ of\ Default * Bankrupcy\ Costs$$

1.5 Dividend Discount Model

Equity providers have the right to own the future profits that the investment may generate as their fundamental compensation for bearing risk. Those profits are primarily distributed in the form of dividends. Equity value can thus be estimated as the present value of such expected dividends. This valuation method is most wisely applied to companies that pay out their entire free cash flow as dividends.

Gordon (1959) proposes the simplest model. Assuming that dividends are expected to grow at a known, constant rate (g), intrinsic share value can be estimated as the following perpetuity:

$$Share\ Value_0 = \frac{Dividend_0 * (1 + g)}{(k_e - g)}$$

Despite its simplicity, Gordon model's unrealistic assumption that dividends are to grow indefinitely at a constant rate prevents it from being reliably used most of the time. Fuller, R.J. et. al (1984) present a more complex model in which dividends evolve at a higher growth rate

in the short-term (g_s) and then decline linearly towards its long-term growth rate (g_l). Share price is estimated according the following formula:

$$Share\ Price_0 = \frac{Dividend_0 * (1 + g_l)}{(k_e - g_l)} + \frac{Dividend_0 * H^3 * (g_s - g_l)}{(k_e - g_l)}$$

Alternative models exist that adjust for specific situations, but they are all bound by strict restrictions as to when they are appropriately applicable. For this reason, this methodology will not be used in this dissertation.

1.6 Economic Profit Model

Despite its popularity amongst practitioners and academics, traditional DCF models fail to provide useful insight about the company's economic performance. Economic Profit models indicate when and how the company creates value, while producing similar valuation results as DCF models.

Return on Invested Capital (RoIC) plays a crucial role as a barometer for economic profitability. Koller et al. (2005) propose the following measure for Economic Profit:

$$EP_t = Invested\ Capital_{t-1} * (RoIC^4{}_t - WACC)$$

Given RoIC's formula, Economic Profit can alternatively be rewritten as follows:

$$EP_t = EBIT_t - (Invested\ Capital_{t-1} * WACC)$$

Similar to the DCF model methodology, Economic Profits are estimated for the company´s lifetime and discounted back at WACC. If the company is expected to operate into the foreseeable future, EP is assumed to continue to grow at a constant rate and computed as a perpetuity. Enterprise Value is estimated as follows:

$$Enterprise\ Value = Invested\ Capital_0 + \sum_{t=1}^{n} \frac{EP_t}{(1 + WACC)^t} + \frac{TV_n}{(1 + WACC)^n}$$

Companies' value is thus equal to the value of their present invested capital plus its future capacity to implement profitable investments.

1.7 Relative Valuation Model

DCF models are indeed the most flexible valuation models. They rely, nonetheless, in a multitude of forecasts that may undermine its credibility. Using operating multiples of

[3] H represents half of the total number of years of high-growth period

[4] $RoIC = \frac{EBIT_t * (1-T)}{Invested\ Capital_{t-1}}$

comparable companies helps in building more solid forecasts, comparing the company's performance to that of its peers and shedding light on what is the market operators' sentiment about the industry and its players.

When choosing comparable peers, it is vital that they have similar business models and operations. Goedhart et. al. (2005) also make the point that they should have similar expectations regarding earnings growth, invested capital profitability and cost of capital.

Relative valuation may take form by comparing how peers' shares are trading relative to key performance metrics. This typically materializes in ratios like Price-to-Earnings (P/E), Price-to-Sales (P/S) or Price-to-Equity Book Value (P/B), which would then be applied to the company's performance figures to estimate its share value. Despite being extensively used by practitioners (especially P/E), Goedhart et. al. (2005) identify two major drawbacks in using P/E multiples: they fail to consider each company's specific capital structure and are impacted by non-operating activities, which are often one-time events. P/S does not take into account the business' profitability and P/B fails to capture the value of brands and human capital as well as differences in capital intensity of production processes.

Alternatively, analysts compute performance ratios relative to the value of the company as a whole – Enterprise Value (EV) Multiples. The most common ones are EV-to-EBITDA and EV-to-EBIT. Their main advantage is that they are not impacted by different capital structures (unless material changes to cost of capital take place), only establishing a comparison across similar operating activities.

Other multiples exist that are not dissected in this dissertation. The reader should bear in mind that relative valuation can provide a helpful check on a DCF model and critical insight into value drivers of an industry.

1.8 Option Pricing Theory

Option Pricing Theory emerged from the increasing discomfort felt by analysts about traditional models not correctly integrating the value of future strategic decisions. Throughout the lifetime of a company, Management is faced with several operating and investing opportunities. Such opportunities may even not be implemented, but the fact that they exist should contribute to the firm's value.

Luehrman (1997) compares this opportunities to a financial option. That option incorporates the right – but not the obligation, to start, alter or cease a business activity. In valuing this option, the analyst must take into account the cash flows of the opportunity, the

timing of those cash flows, for how long the decision can be delayed and the risks associated with such opportunity and the possibility that circumstances change before making the decision.

A favorite model to value such options, which incorporates those factors and shares inputs with the DCF model, is the Black-Scholes Option Pricing model. One must still bear in mind that such models are just a simplistic representation of real-life decision processes – for instance, Damodaran (2002) points out that Black-Scholes model values options that can only be exercised at the time they expire and can only by applied to assets that do not pay dividends.

As such, Option Pricing models are best used as a complement to other valuation methods.

1.9 Conclusion

Every company has its own singularities, circumstances and restrictions, which may change over time. So far, no set of procedures or mathematical formulas has been designed that can claim the capacity to embrace all of those characteristics in a single model. Valuation analysts should adapt their tools to each specific exercise and avoid the illusion that their results are flawlessly precise or immutable.

It is nonetheless praiseworthy to try to identify the fundamental value drivers of a company, the relationships with its stakeholders, within its industry and with the global economy - to come to an educated estimate of what the company is financially worth. Hopefully, this Literature Review succeeds in presenting a coherent summary of the most commonly used valuation models and, by identifying their major limitations, setting ground to further improvement in this field of study.

2. Adjustments to the Financial Statements

Preceding the analysis and financial valuation of any given company, the analyst must take a critical approach to the way financial statements are presented.

All the major accounting systems (IFRS, US GAAP, etc.) give room for management estimations and accounting options that are needed for the correct interpretation and representation of specific financial transactions. Among the most common instances are the accounting treatment of operating leases, decisions as to whether capitalize or expense a given transaction or the estimation of the fixed assets' useful lives.

Adjustments to the historical Financial Statements were made for this dissertation exercise, namely in the accounting treatment of operating leases. A detailed explanation of the adjustment can be consulted in Appendix 1.

3. Business and Industry Analysis

3.1 Company Overview

Founded in 1873, Atlas Copco is a Swedish-based, global engineering group with a world-leading position in all of its areas of operations. The company has a global reach spanning more than 180 countries, with self-owned customer centres in 91 countries and production facilities in 30 countries. In 2014, Atlas Copco presented revenues of around SEK 94 billion, operating profit (as measured by reported EBIT) of SEK 17 billion and diluted earnings per share (including extraordinary items) of SEK 10.01. At year-end 2014, Atlas Copco accounted for more than 44,000 employees.

The primary source of the Group's revenues is capital investment (equipment sales). In recent years, Management has tried to reshape Atlas' business model, putting an increasing emphasis on aftermarket service (maintenance/reparation services and spare-parts sales), which delivers higher profit margins and contributes to smoothen the cyclicality of industrial investments. The aftermarket business already represents around 45% of Atlas Copco's Revenues.

Geographically, Europe and Asia Pacific represent the largest share of sales, accounting for approximately 60% of the Group's total Revenues. USA, China and Germany are the top three end markets. Europe is the largest production base for Atlas, with nearly 42% of the Group's employees working there.

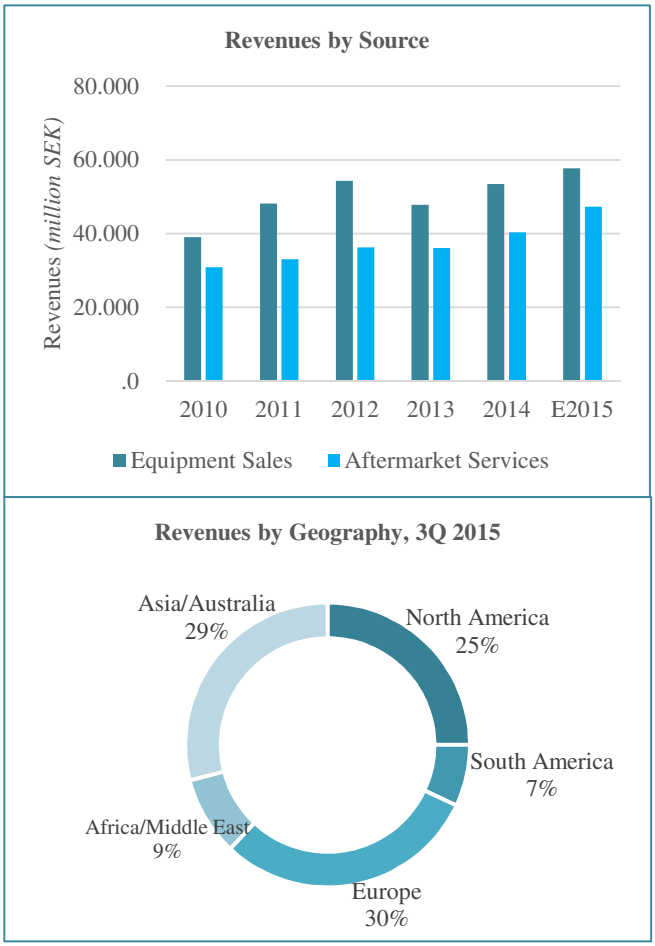


ILLUSTRATION 1 – Revenues Description. *Source: Atlas Copco Annual Reports*

Atlas Copco operates across four major business areas: Compressor Technique (CT), Mining and Rock Excavation Technique (MRET), Construction Technique and Industrial Technique. Their activities will be further described and analysed latter on.

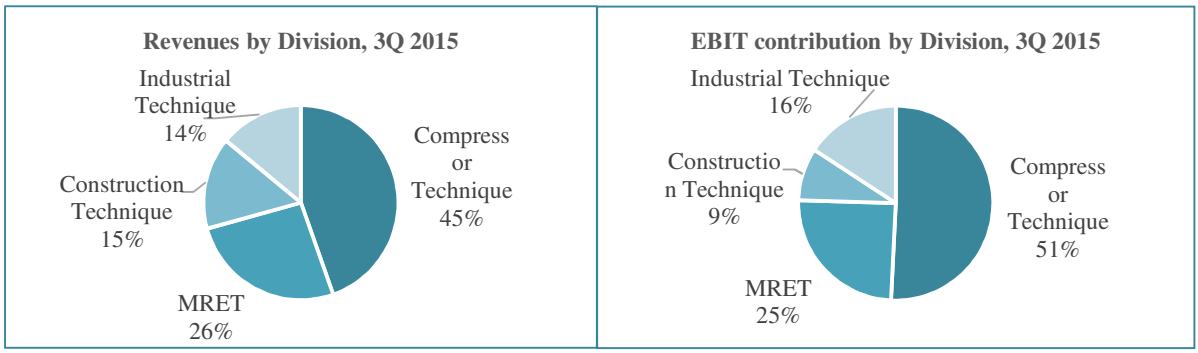


ILLUSTRATION 2 - Segments' contribution for the business. *Source: Atlas Copco Annual Reports*

3.1.1 Balance Sheet Structure

The company's Balance Sheet is mainly composed of tangible and intangible assets, inventories and receivables. Senior Management identifies as one of the main objectives keeping an "asset-light" structure – this is achieved by outsourcing most of the non-essential production processes and recurring to operating leases for a considerable part of the machinery utilized.

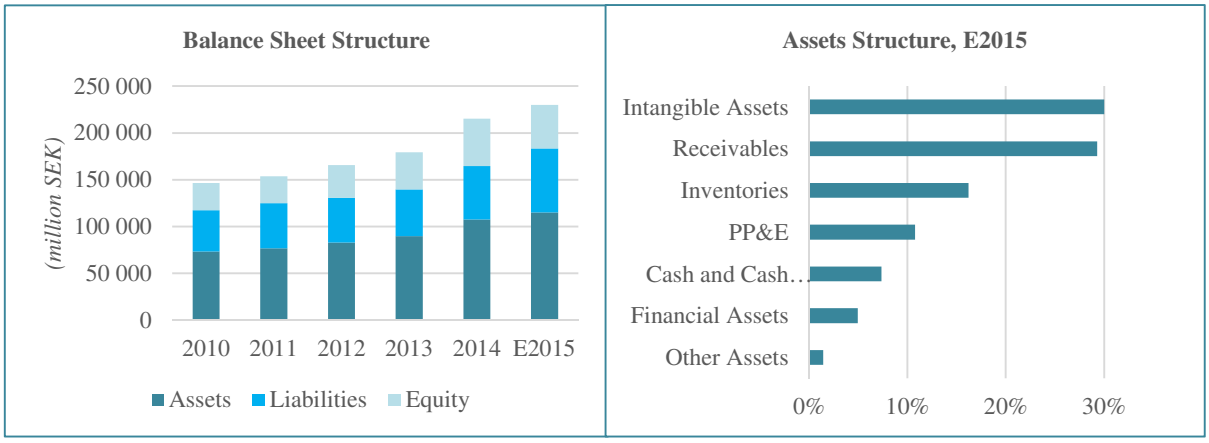


ILLUSTRATION 3 – Balance Sheet Highlights. Figures adjusted according Adjustments to Financial Statements section. *Sources: Atlas Copco Annual Reports; Own calculations*

Throughout its years of activity, Atlas Copco has had a very conservative approach to the use of debt in its capital structure. Even though debt and interest coverage ratio levels are still very solid, they were impacted in 2014 by the acquisition of Edwards Group Ltd. Atlas financial liabilities are mainly composed of US Dollars and Euro denominated bonds and bank loans, with current maturities ranging from 2015 to 2024 (as of 31 December, 2014). Such liabilities have a long-term debt rating of A from Standard & Poor's Corp., A from Fitch Ratings and A2 from Moody's Investor Service Inc.

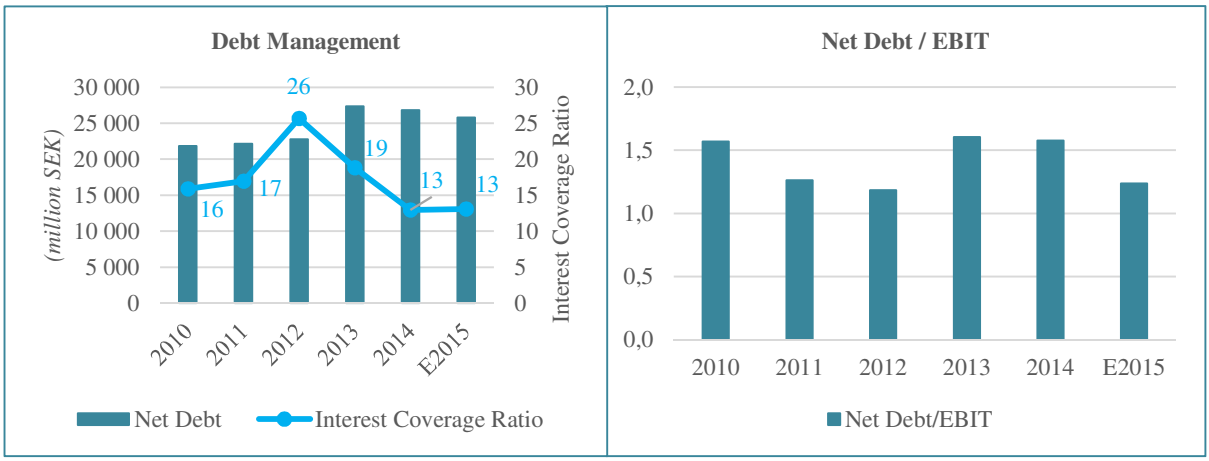


ILLUSTRATION 4 – Balance Sheet Highlights. Figures adjusted according Adjustments to Financial Statements section.
Sources: Atlas Copco Annual Reports; Own calculations

3.1.2 Business Performance and Profitability

As a major industrial supplier of heavy machinery and equipment, Atlas Copco is affected by the cyclicality inherent to that sector. Despite having a decent pricing power over its sales, the company's profitability is normally hurt during periods of economic downturn, in which order volumes are severely impacted. Even so, the Company has managed to grow Revenues and Operating Profits at a 10-year CAGR (Compounded Annual Growth Rate) of 7.6% and 8.5%, respectively.

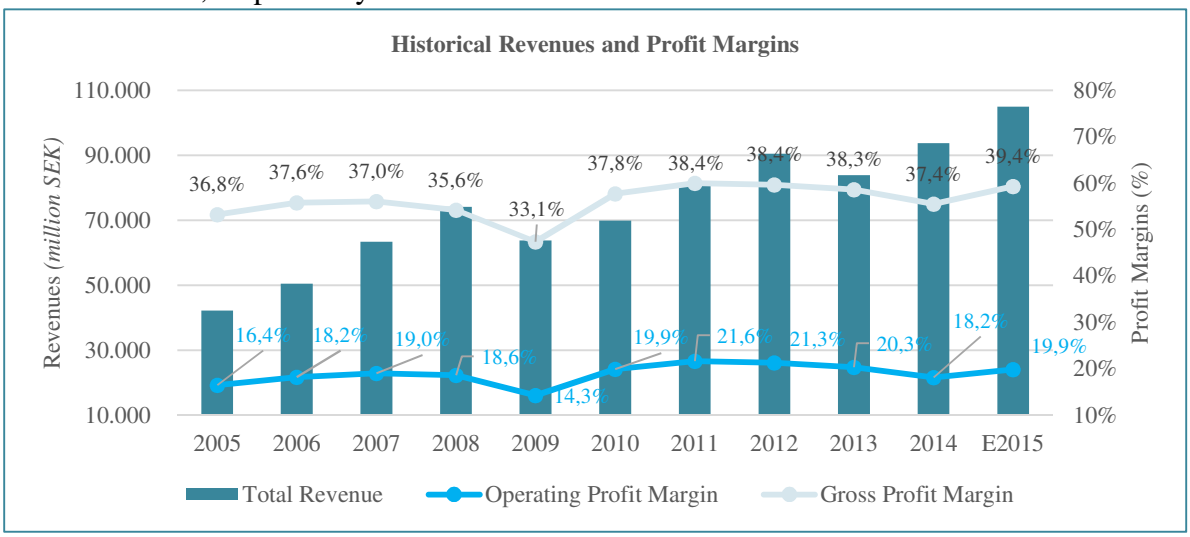


ILLUSTRATION 5 – Historical Profitability. *Source: Atlas Copco Annual Reports*

Earnings also display the cyclicality effect described above, delivering a 6-year CAGR of approximately 7.2%. Out of those earnings, Atlas Copco has set as a Management target to distribute about 50% to its shareholders every year.

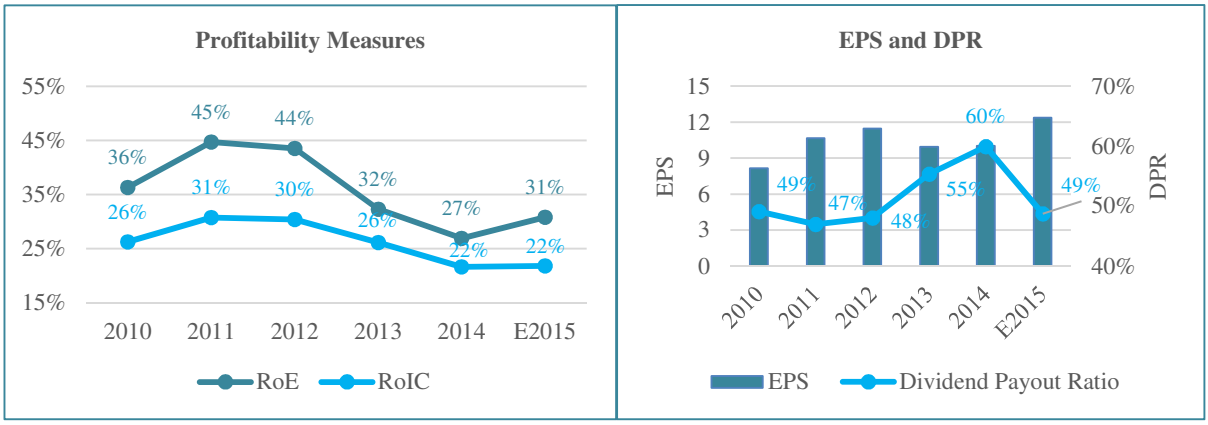


ILLUSTRATION 6 – Historical Profitability. *Source: Atlas Copco Annual Reports*

Another major objective is to achieve a sustainable high return on invested capital. This goal is closely correlated with the asset-light structure discussed earlier. The constant concern about asset efficiency not only allows Atlas Copco to respond to changes in business demands, but also enables it to be the Company with highest levels of Return on Equity (RoE) and Return on Invested Capital (RoIC) amongst its peers.

3.2 Segment Description

3.2.1 Compressor Technique

The Compressor Technique segment focuses on the production and delivery of industrial compressors, vacuum solutions, gas and process compressors expanders, air and gas treatment equipment and air management systems. A compressor is a machine that creates and uses compressed air in pneumatic tools in a huge variety of industrial production processes.

The business area has a global service network and aims at innovating for sustainable productivity in the manufacturing, oil and gas and process industries.

Compressor technique is the largest EBIT contributor to Atlas Copco and its business area runs a multi-brand setup regarded as a global leader, with a market share of around 30%.

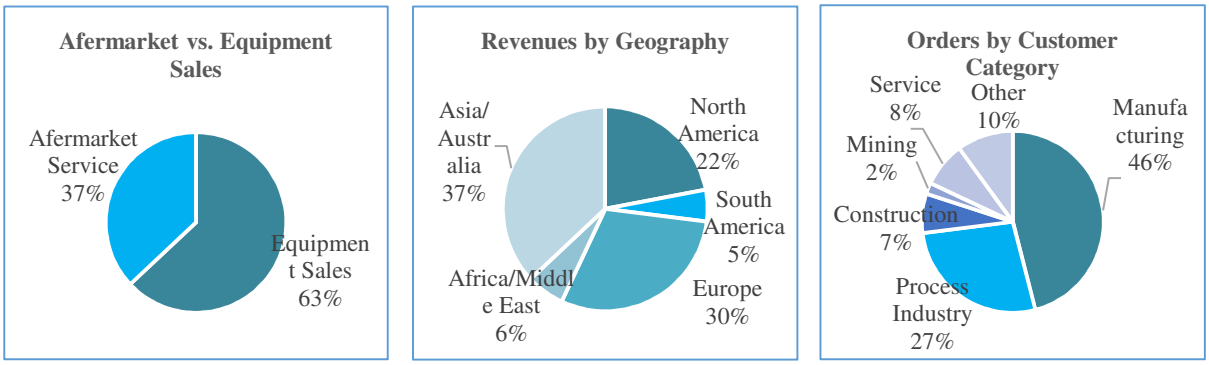


ILLUSTRATION 7 – Compressor Technique business highlights. *Source: Atlas Copco Annual Reports*

EBIT margins have been very stable, despite muted growth in equipment sales in recent years. The major reasons for this are the ever-growing aftermarket business, which is considerably more profitable than equipment sales and its asset-light structure which enable Atlas to adjust production and reduce costs faster than a more integrated manufacturing setup. Over the past 6 years Compressor Technique segment has delivered a 7.9% Revenues CAGR.

Revenue drivers are usually identified as investments in machinery, industrial production and energy costs for the equipment sales and machine obsolescence for aftermarket services.

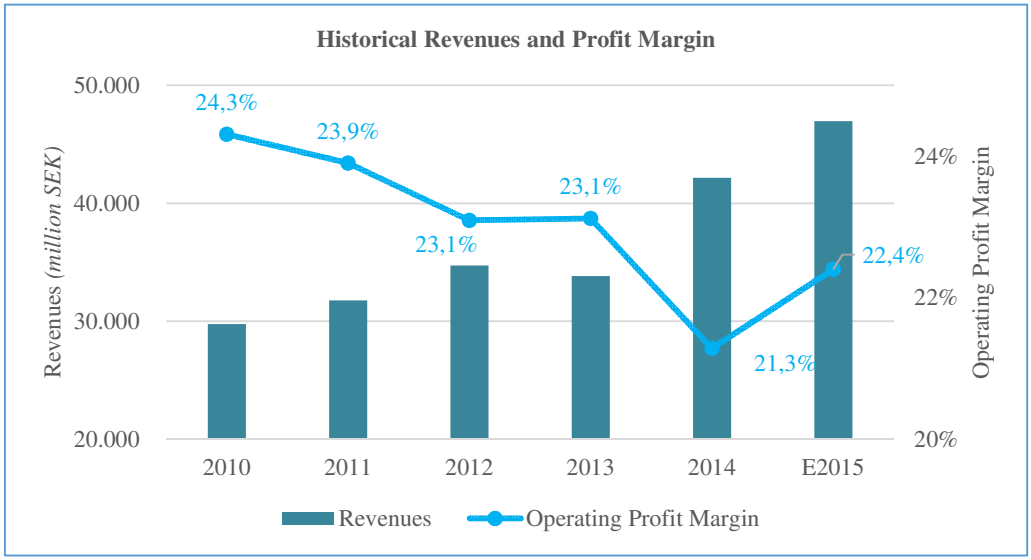


ILLUSTRATION 8 – Compressor Technique business profitability. *Source: Atlas Copco Annual Reports*

3.2.2 Industrial Technique

Industrial Technique segment provides industrial power tools and operating systems, as well as software and services. It supplies mainly the automotive and aerospace industries and industrial manufacturing. This segment is expected to have 23.3% Operating Profit Margin, on total Revenues of SEK 14,583 million, which represents a 6-year CAGR of around 14.5%.

Its revenue drivers are assembly line investments, replacements and service of tools and systems and changes in manufacturing methods.

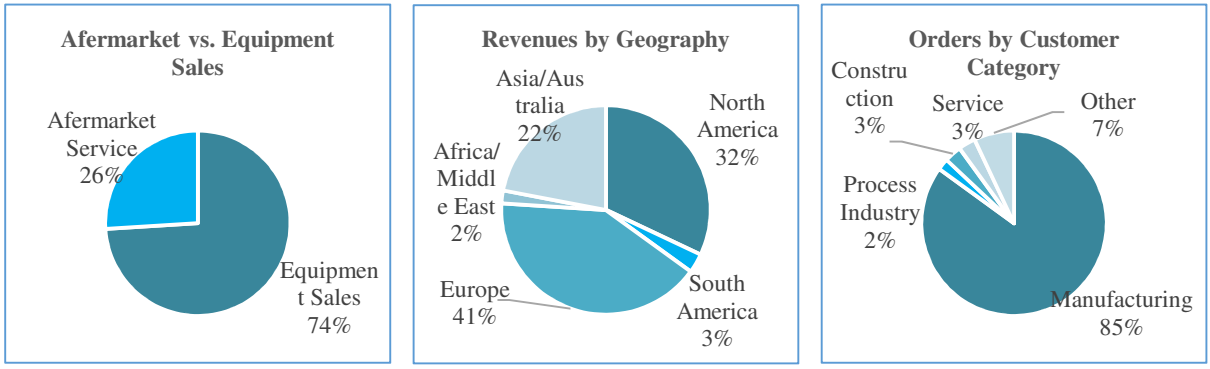


ILLUSTRATION 9 - Industrial Technique business highlights. *Source: Atlas Copco Annual Reports*

3.2.3 Mining and Rock Excavation Technique

This segment provides equipment for drilling and rock excavation. It operates under six different main categories: underground rock drilling equipment; underground loading and haulage equipment; underground utility vehicles; surface drilling equipment; exploration drilling and ground engineering equipment; and rock drilling tools. It has exposure to different mineral materials, like gold, coal, iron ore or copper.

Mining and Rock Excavation is expected to show total Revenues for 2015 of about SEK 27,402 million (6-year CAGR of 3.3%) and Operating Profit Margin of 19%. The recent performance of this segment has been affected by lower investments and focus on costs among mining customers. The main drivers of this business are machine investments and ore production, infrastructure and public investments, and non-building construction activity.

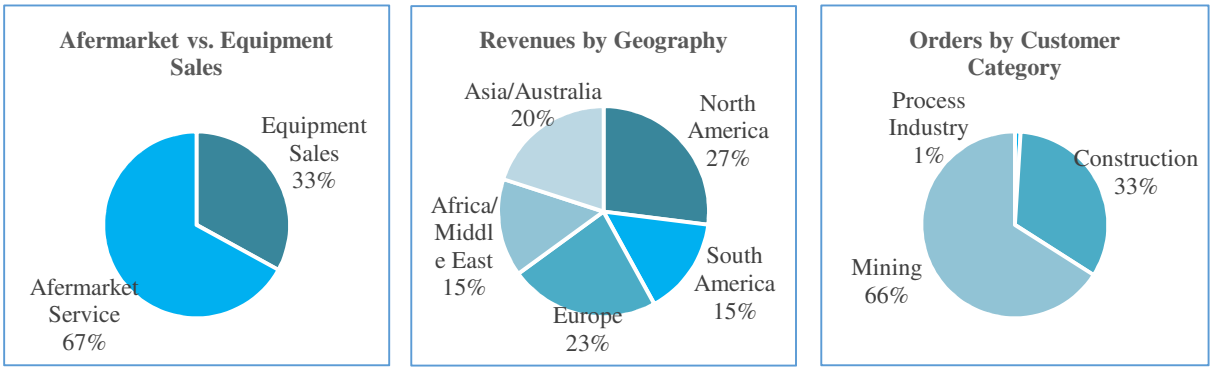


ILLUSTRATION 10 – Mining and Rock Excavation Technique business highlights. *Source: Atlas Copco Annual Reports*

3.2.4 Construction Technique

The Construction Technique segment spreads its equipment portfolio from construction and demolition tools, pumps and generators to lighting towers, portable compressors and compaction and paving equipment. It holds leading market positions worldwide in most of its

operations, focusing on general and civil engineering contractors. Rental companies are also important costumers for light construction tools like drills, breakers and handheld compaction equipment.

My projection for this segment's 2015 Revenues is around SEK 16,032 million, representing a 6-year CAGR of c. 6.4%, and an Operating Profit Margin of 12.3%.

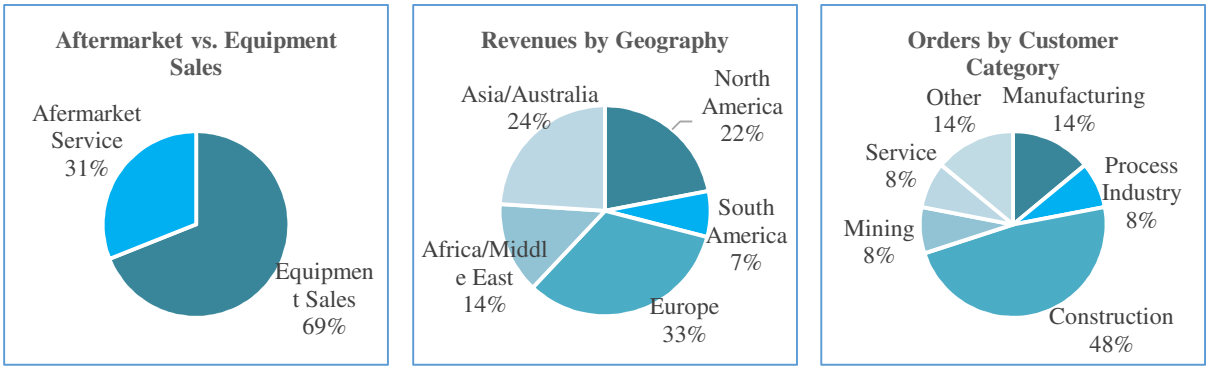


ILLUSTRATION 11 - Construction Technique business highlights. *Source: Atlas Copco Annual Reports*

3.3 Industry Overview

Atlas Copco is better defined as a company that operates within the Capital Goods Industry.

One should start by mentioning that a distinguishing characteristic of the capital goods sector is its heterogeneity, ranging from applications, customer groups and technologies, to profitability levels, growth rates and valuation multiples.

Normally, positive economies of scale are possible to achieve, so barriers to entry are high and reward industry leaders. These barriers are present in both input costs and manufacturing efficiency, as well as in aftersales servicing. Capital goods have usually a higher rate of utilization by costumers, so aftermarket services and "MRO" (maintenance, repair and overhaul) account for a bigger slice of market opportunity than it normally does for consumer markets. Costumers typically expect reliable fast-answering MRO networks, which new entrants struggle to deliver. Leading companies have traditionally exploited this competitive advantage and have faced relatively little pricing strategies.

Over the last half decade, capital equipment makers enjoyed double-digit volume growth but have also suffered considerable rise in raw materials prices (cost inflation).

In emerging markets, demand has focused on the swift expansion of infrastructure and manufacturing capacity – although this trend has recently been put to question by the sluggish economic development and signs of overcapacity in big countries like China and Brazil. In developed markets, demand focuses more on replacement and MRO.

Capital goods industry is mainly driven by the following aspects:

- **CAPEX Cycle**: capital goods companies' earnings are strongly linked to their customers' capital expenditure plans, in both the private and public sector (the latter currently exposed to austerity measures).
- **CAPEX vs. OPEX**: there is a distinction to be made between capital expenditures and operational expenditures. Mining equipment companies, for example, are often more exposed to customer OPEX and can maintain revenues even in times of low CAPEX activity.
- **New Equipment vs Aftermarket:** the continue development of the installed service base is essential in securing defensive revenue stream. Some companies even engage in very-low-margin (or even at a loss) equipment sale, targeting higher service margins.
- **Input Costs:** Buying raw materials, like industrial metals (iron, steel, nickel and copper) is a huge part of this companies' business. However, historically the sector has not engaged in extensive long-term hedging, being therefore exposed to rising input costs. Having said that, rising raw materials also propel rising customer demand, particularly in emerging markets.

Although some companies indeed operate across several specialized sectors with capital goods industry, the majority usually limits its activity to one specific sector, such as mechanical or electrical equipment. Therefore, industry consolidation usually happens within sectors.

A good proxy for assessing the performance of the European capital goods sector, widely used by investors and industry players, is the **MSCI European Capital Goods Index** (Bloomberg Ticker: MXEU0CG Index). Over a business cycle, the major European companies have averaged 26.5%, 7.4% and 4.9% of Gross Margin, Operating Profit Margin and Net Profit Margin, respectively. Return on equity has averaged 14.6%.

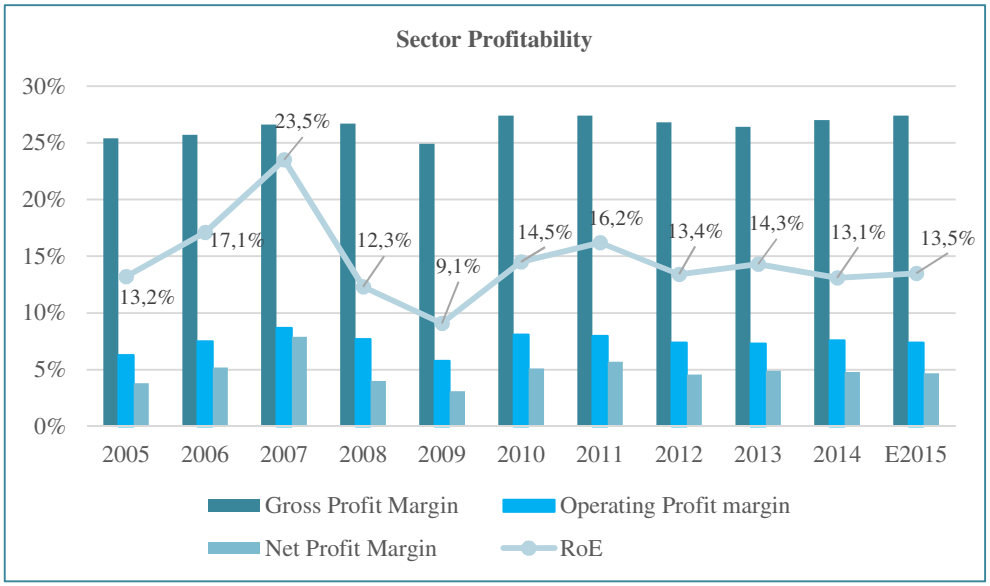


ILLUSTRATION 12 – Capital Goods Industry profitability. *Source: Bloomberg; MSCI Europe Capital Goods Index*

Capital goods companies behave pretty much as global industrial companies do, as far as market valuation is concerned. Traditional metrics like forward-looking Price-to-Earnings, Enterprise Value/EBITDA or Enterprise Value/EBIT are used by investors and market researchers as benchmarks. Across an entire business cycle, rolling one-year-forward P/E ranges from around 12x to 18x.

The sector is currently posting a dividend yield of around 3%, on a 50% payout ratio. This contrasts with a payout ratio of c. 40% before the financial crisis, with many companies having moved to a progressive dollar dividend policy.

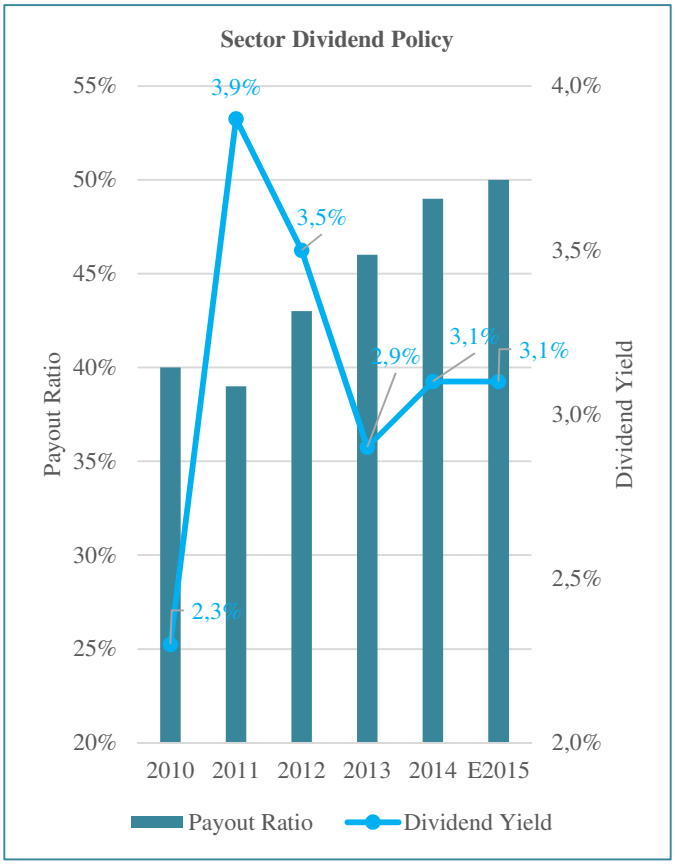


ILLUSTRATION 13 - Capital Goods Industry dividend policy. *Source: Bloomberg; MSCI Europe Capital Goods Index, J.P. Morgan Research Report*

Aftermarket Services have been assuming an ever increasing importance for these companies' business health, margin protection and profitability growth. These services are estimated to deliver 2.2x higher profitability than equipment sales. Year-on-year revenues from

these business segment grew at around 7% since 2008, contrasting with overall 2% organic growth of the European capital goods sector.

3.4 Capital Structure and Cost of Capital

To properly identify the cost of capital used by Atlas Copco throughout its operations and investment activity, one must start by analyzing how its capital structure is composed. The company´s capital base is entirely composed of shareholders' equity and financial debt – there are currently no preferred shares outstanding. Financial debt refers to all interest bearing liabilities, namely, bonds issued, bank loans, overdrafts and backup facilities, finance leases, operating leases (see Appendix 1) and post-employment benefits.

Market Value of Debt

The market value of Atlas Copco's debt was estimated through a sum-of-parts exercise, in which the fair value of the different instruments was estimated according to the following methodology (see Appendix 2):

- **Bonds:** discounted-cash flow method, using the market yield to maturity at 31st of December of each year. Bonds issued in foreign currencies (Euros and US Dollars) were translated to SEK using the respective spot exchange rate at 31st of December of each year.
- **Bank Loans:** no detailed information on the loans' characteristics were available. Accounted for their fair value as *per* Atlas Copco's Annual Reports.
- **Finance Leases:** no detailed information on the loans' characteristics were available. Accounted for their fair value as *per* Atlas Copco's Annual Reports.
- **Operating Leases:** Accounted for their fair, capitalized value, as detailed in the Adjustments to the Financial Statements section.
- **Net Pension Liability:** Accounted for their fair value as *per* Atlas Copco's Annual Reports.

Market Value of Equity

As stated earlier, Atlas presents a fairly simple equity base, composed only of ordinary shares.

Currently there are two classes of Atlas Copco shares trading in public markets, A and B. There is no seniority among them relating to financial claims, the only difference being that B shares have 1/10 of the voting rights of A shares.

As such, market value of equity was estimated through the calculation of the company's market capitalization, i.e. multiplying the market share price of each class as of the 31st of December of each year, by the number of shares outstanding for each class.

Historical and Target Capital Structure

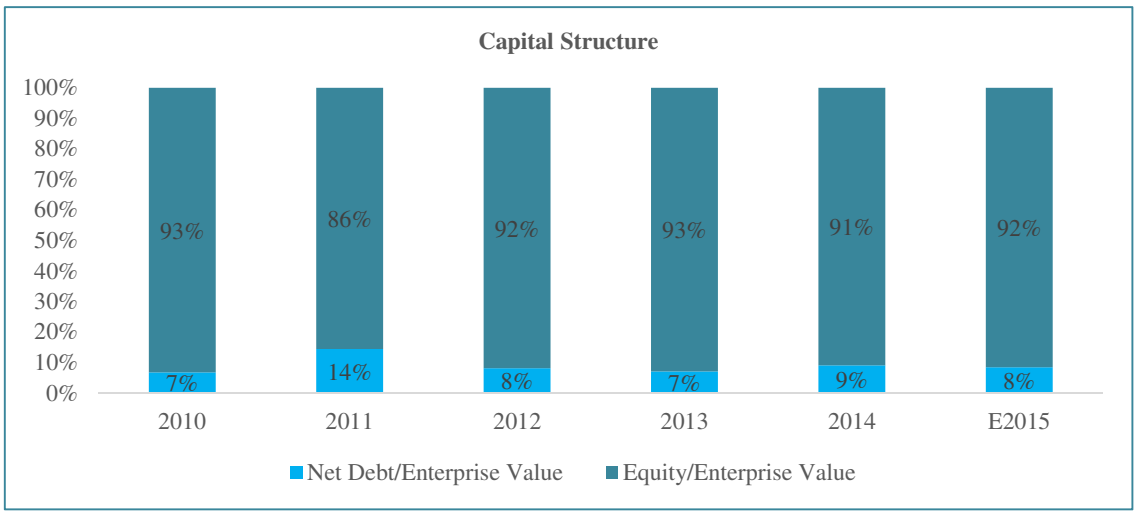


ILLUSTRATION 14 – Atlas Copco Capital Structure. *Source: Atlas Copco Annual Reports; Own calculations*

Atlas Copco has managed to maintain a capital structure heavily supported by equity. This may be traced back to Management's intentions of keeping the company agile and ready to endure the cyclicality of the industry. Despite not mentioning a specific target to its capital structure, it is fair to assume that debt will represent a marginal part of Atlas Copco operations. As such, I have opted to define the following company's target capital structure: **E/V= 92%** and **Net Debt[5]/V= 8%** (see Appendix 3).

Cost of Debt

Atlas Copco uses several sources of debt. Some of them are publicly traded, but an important part is not. For the publicly traded instruments, market yield-to-maturity is regarded as the debt cost. For bank loans, Financial Leases, Capitalized Operating Leases and Net Pension Liabilities I have opted to use as proxy the yield to maturity of the traded bond with the most similar maturity. The result is a weighted average cost of debt, as detailed in the following table:

[5] Excess Cash is subtracted to Debt to avoid a double-accounting mistake (it is assumed to be reflected in the share price). Historically, Atlas Copco has maintained a minimum of around 5.5% of Revenues in Cash, so I have considered that to be a fair estimate of Operating Cash. Amounts above such hurdle are considered Excess Cash throughout this dissertation.

Instrument	Maturity	Market Value *(million SEK)*	YTM
500 MEUR 7-year bond	4 years	5.080	0,54%
500 MEUR 10-year bond	7 years	5.148	1,22%
800 MUSD 10-year bond	2 years	7.321	1,81%
142.5 MUSD 20-year bond	4 years	1.478	2,49%
Bank Loans	6 years	5.821	1,22%
Financial Leases	4 years	178	2,49%
Capitalized Operating Leases	7 years	2.518	1,22%
Net Pension Liabilities	Long term (+20 years)	2.542	1,22%
Weighted Average Cost of Debt (Kd)			**1,32%**

ILLUSTRATION 15 - Atlas Copco estimated cost of debt. *Source: Atlas Copco Annual Reports; Thompson Reuters; Own calculations*

Cost of Equity

As detailed in the Literature Review Section, cost of equity is estimated using the Capital Asset Pricing Model. The model estimates the company-specific risk through the use of beta (β), which measures a stock's co-movement with the market portfolio. Stocks with a beta higher than 1 are considered to be riskier than the others.

This was done by regressing the historical monthly excess returns of Atlas Copco shares against market excess returns, for the last 5 years (totaling 69 observations). The market portfolio refers to a portfolio of European Mid and Large Capitalization stocks estimated by MSCI (MSCI Europe Index).

From this exercise I retrieved a beta of **1.067**. This is what usually is called the *raw* beta and represents an estimate of the company's true beta. This estimate can be improved, based on historical evidence that betas usually revert to the mean. I opted to use a smoothing technique to account for this effect, which was initially proposed by Marshall Blume (1975), and is used nowadays by Bloomberg. The final adjusted beta used in my calculations is **1.045**.

Component	Value	Observation
Risk-free Rate	0,71%	Being a Swedish company, the asset that best represents a long-term risk-free rate of return is the Swedish sovereign debt, as represented by the **most recent yield (October 2015)** for the **Sovereign bonds with 10 years maturity (source: Bank of Sweden [Sveriges Riksbank])**
Adjusted Beta (β)	*1,045*	Adjusted β = 1/3 + 2/3 * *Raw* β
Market Risk Premium	6,10%	Arithmetic Average 1900-2010 for Sweden. Source: *Damodaran, A. (2011), "Equity Risk Premiums (ERP): Determinants, Estimation and Implications", Working Paper*
Cost of Equity (Ke)	**7,08%**	Cost of Equity = Risk-free Rate + β * Market Risk Premium

ILLUSTRATION 16 - Atlas Copco estimated cost of equity. *Source: Atlas Copco Annual Reports; Thompson Reuters; Bank of Sweden; Damodaran, A. (2011), "Equity Risk Premiums (ERP): Determinants, Estimation and Implications", Working Paper; Own calculations*

Weighted Average Cost of Capital (WACC)

The target capital structure is expected to be constant, at 92% of Equity and 8% of Financial Net Debt. Given so, it is appropriate to estimate its cost using the Weighted Average Cost of Capital (WACC), as explained in the Literature Review.

The effective tax rate was retrieved from Atlas Copco's 2015 3rd Quarter, and is regarded by Management as stable for the foreseeable future.

Component	Value
Equity/V	92%
Net Debt/V	8%
Cost of Equity	7,08%
Cost of Debt	1,32%
Effective Tax Rate	*24,30%*
WACC	**6,57%**

4. Financial Valuation

4.1 Discounted Cash Flow Valuation

4.1.1 Methodology

This section dissects the discounted cash flow model I have put together to estimate the intrinsic value of Atlas Copco shares. As it is explained with further detail in the Literature Review section, this is a sound exercise, well regarded by both academics and finance practitioners, based on the notion that a company's intrinsic worth is measured by its operating ability to generate excess cash flows. These can then be distributed to its capital providers (shareholders and debtholders).

The FCFF are estimated for a given future time period (Explicit Period). Beyond that, as the company reaches its steady-state, it is assumed to grow at a constant rate. This model assumes an Explicit Period of 13 years into the future (2016-2028), divided into two sub-periods:

- **2016-2018:** Near-term future, in which forecasts retrieved from different credible sources are used to estimate the evolution of the different components of the FCFF, with especial emphasis on Revenues from the different business segments;
- **2019-2028:** Medium-term future, in which said components evolve steadily towards my expectations for the company's steady-state. A ten-year period is soundly regarded as a good estimation for the time it takes a Capital Goods company to complete a business cycle, so I consider it reasonable to be the time it will take for Atlas Copco to achieve its steady-state.

After 2028, FCFF are assumed to grow at a terminal constant growth rate (g), so they can be valued as a perpetuity and considered the firm's **Terminal Value (TV)**. The TV is computed according to the following formula:

$$TV_{2028} = \frac{\frac{FCFF_{2028} * (1+g)}{WACC - g}}{(1+WACC)}$$

The estimated FCFF and TV are then discounted back to the present and add-up to the final estimation of the company's Enterprise Value. The discount rate used is a representation of the capital providers' expected rate of return on their investment. As detailed in the Capital Structure and Cost of Capital section, Atlas Copco capital structure is not expected to change from its current state and as such, the appropriate discount rate to be used is the **Weighted Average Cost of Capital** (WACC).

The **Enterprise Value (EV)** is computed according to the following formula:

$$EV = \frac{FCFF_{2016}}{(1+WACC)^1} + \frac{FCFF_{2017}}{(1+WACC)^2} + \cdots + \frac{FCFF_{2028} + TV_{2028}}{(1+WACC)^{13}}$$

As the purpose of this dissertation is to calculate the fair value of Atlas Copco's equity shares, the company's Equity Value must be estimated. To do so, it is necessary to subtract from Enterprise Value the value of Net Debt, already computed in the Capital Structure and Cost of Capital section.

4.1.2 Economic and Business Assumptions

My predictions for the future business performance have underlying a set of economic assumptions and targets that are expected to be met. I firmly believe that the forecasts are sound and reliable, based on specialists projections, economic authorities estimates, Atlas Copco Management outlook and my own critical view of the industry evolution.

As for the company's steady-state, the major prediction made is that both Revenues and the Free Cash Flows to the Firm will grow at a constant rate, which I project to be 2%. Atlas Copco can be regarded as a mature, well established company. Additionally, it has recently shown little capacity to grow in real terms – in fact, growth has come either from acquisitions or currency effects. As such, I believe a conservative approach is to assume that, in steady-state, Atlas will only grow organically to the extent of inflation price increases. I assume the steady-state inflation rate to be 2%, based on major economies' Central Banks policies of guiding their price increases towards that target.

I additionally assume that Capital Expenditures will equal Depreciation Expenses – in steady-state, Atlas should only invest in durable assets the amount needed to cover for their depreciation, assuring the continuation of the company's operations. This suits my projection of no real organic growth for steady-state period.

The Explicit Period was modelled according to a set of detailed forecasts, which are presented in sub-sections below.

4.1.2.1 Revenues

As a leading player in its sector, Atlas Copco's revenues are impacted by a number of different factors. Besides organic growth, acquisitions of other companies are also regarded by Management as a strategic option to grow and diversify its Revenues stream. Additionally, the global character of Atlas' business makes that changes in foreign currency exchange also may significantly influence year-end SEK Revenues.

In the forecasts displayed below, I only take into account organic sales. That is because I feel there is no reliable way to estimate the impact of acquisitions or currency effects on the

future level of sales. Instead, present at the end of this exercise is sensitivity of Atlas Copco's fair value to hypothetical changes in the major exchange rates.

Sales Bridge	2010	2011	2012	2013	2014	2015
Organic	12%	22%	9%	-4%	-2%	3%
Compressor Technique	*4%*	*12%*	*7%*	*1%*	*1%*	*0%*
Industrial Technique	*26%*	*24%*	*12%*	*1%*	*8%*	*10%*
Construction Technique	*23%*	*18%*	*-1%*	*0%*	*2%*	*-3%*
Mining and Rock Excavation Technique	*12%*	*38%*	*14%*	*-12%*	*-12%*	*-4%*
Structural change	2%	2%	2%	1%	12%	1%
Currency	-4%	-8%	0%	-4%	2%	8%
Total Revenue Growth	**10%**	**16%**	**11%**	**-7%**	**12%**	**12%**

ILLUSTRATION 17 – Historical Sales Bridge. *Source: Atlas Copco Annual Reports*

Compressor Technique Revenues

- **Equipment Sales:** Compressor Technique segment has recently experienced anemic organic growth. In the last years, total revenue growth has been achieved both through acquisitions and exchange-rate impacts. Despite that, economic authorities are mildly optimistic for the near-future evolution of Industrial Production, with the latest forecasts pointing to growth rates of around 2% for Europe, 3% for USA and 2% for Asia Pacific, to be reached by 2018. I expect equipment sales to pick-up from this good macro environment in those 3 years, reaching a growth rate of 3% and then steadily evolving towards the company's terminal growth rate in the next 10 years *(Source: Eurostat, US Federal Reserve, Asian Development Bank).*
- **Aftermarket Services:** One of the major strategic pillars of Atlas Copco Management is to expand its aftermarket services, given its superior stability and profitability. As such, I expect them to evolve to a relative weight of 40% on the segment's Revenue Structure, powered by the increase in Industrial Production referred earlier. Once they do, they are expected to grow at terminal growth rate *(Source: Atlas Copco Annual Reports).*

Industrial Technique Revenues

- **Equipment Sales:** Industrial Technique Segment originates around 65% of its revenues from Automotive and Aerospace OEM's. These two sectors have seen extremely positive organic developments in recent years, mainly due to the fact that OEM's have been picking up on investments that had been put on hold since the 2008 financial crisis. Executive surveys and forecasts point to a decrease in

this investment growth rate for the next 3 years, to levels of a mature industry. As such I expect growth rates in these two sectors to come around 3.5% in 2018. The other 35% of revenues relate to General Industry, which I forecast to evolve similarly to Industrial Production, reaching 3% growth by the end of 2018.

This yields a consolidated growth rate for Industrial Technique equipment sales of approximately 3.4% by 2018, which should then evolve towards the company's terminal growth rate in the next 10 years *(Source: Strategy& surveys, KPMG 2015 Industry Report, Eurostat, US Federal Reserve, Asian Development Bank).*

- **Aftermarket Services:** One of the major strategic pillars designated by Atlas Copco Management is to expand its aftermarket services, given its superior stability and profitability. As such, I expect them to evolve to a relative weight of 28% on the segment's Revenue Structure, powered by the increase in Industrial Production referred earlier. Once they do, they are expected to grow at terminal growth rate *(Source: Atlas Copco Annual Reports).*

Construction Technique Revenues

- **Equipment Sales:** Despite the modest organic volume growth in recent years, this segment is expected to benefit from tailwinds in the Global Construction Business, which accounts for half of its revenues. A report from Research and Markets expects heavy construction equipment market to achieve a CAGR of 6.8% in the period 2015-2020, placing a special emphasis on earthmoving equipment (one of the strongest sub-segments within Atlas). This is backed by another report from the Committee for European Construction Equipment (CECE), which forecasts Gross Investment in Equipment to increase by 6% in 2016, for Europe. As such, I expect Construction Technique to benefit from these conditions and achieve an organic growth rate of 3% in the years 2015-2018 and, from then on, to evolve towards the company's terminal growth rate in the next 10 years *(Source: Research and Markets - "Heavy Construction Equipment Market by type, Application and Industry - Forecast to 2020", CECE Annual Economic Report - March 2015).*
- **Aftermarket Services:** One of the major strategic pillars of Atlas Copco Management is to expand its aftermarket services, given its superior stability and profitability. As such, I expect them to evolve to a relative weight of 35% on the

segment's Revenue Structure. Once they do, they are expected to grow at terminal growth rate *(Source: Atlas Copco Annual Reports)*.

Mining and Rock Excavation Technique Revenues

- **Equipment Sales:** Mining equipment sales have experienced significant headwinds, as Extraction Companies delay Capital Expenditure plans following the generalized decline in metal and mineral prices. Atlas Copco is particularly exposed to extractors of gold and copper. Prices of both have declined around 10% and 6% yearly, respectively, for the last 3 years. Experts forecast a further decline in prices, albeit not with the same intensity, which should result in additional downward pressure on CAPEX budgets. Based on these estimates, I expect a further decline in organic equipment sales of 10% in 2016, which should smooth to a decline of 5% by 2018. After that I expect growth rate to linearly converge to the terminal growth rate by 2028 *(Source: Strategy& surveys, BMI research, Rio Tinto Annual Reports, Barclays Mining Equipment Report - August 2015, London Metal Exchange, World Bureau of Metal Statistics, Atlas Copco Annual Reports)*.
- **Aftermarket Services:** aftermarket services are primarily linked to mining production. Despite the generalized decrease in prices, both mineral and metals production have witnessed a modest increase over the last years. In addition, the postponing of investment in new machines has led Miners to increase its servicing costs on existing ones. As such I expect that aftermarket services increase by 5% each year on 2016-2018 and afterwards converge to the terminal growth rate by 2028.

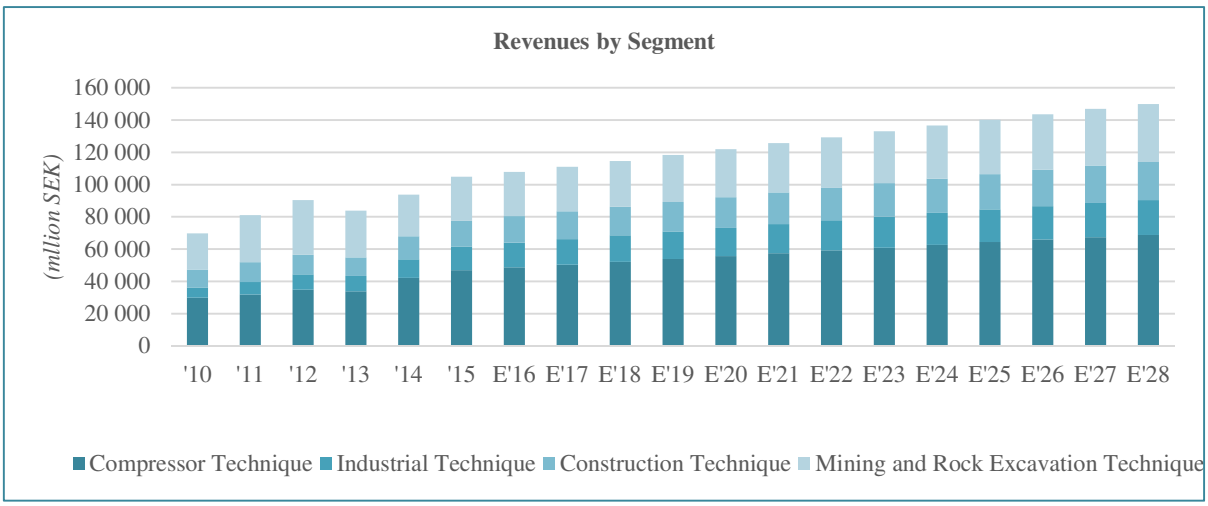


ILLUSTRATION 18 – Revenues Projections, by segment. *Source: Own calculations.*

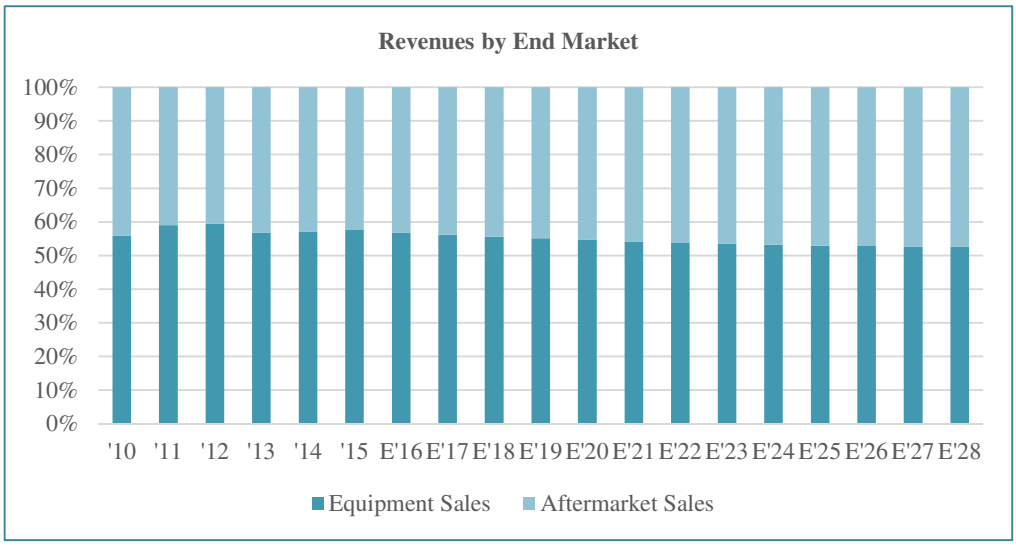


ILLUSTRATION 19 – Revenue Projections, by end market. *Source: Own calculations*

Please refer to Appendices 6, 7 and 8 for the detailed figures of Revenue forecasts.

4.1.2.2 Gross Profit Margin

Gross Profit has seen a considerable improvement in 2015, mainly due to the sharp decrease in metal prices, which represent the most important part of Atlas' cost of sales. Even though I do not expect gross profitability to remain at such high levels, it is reasonable to forecast a modest growth, relative to its historical average. Despite not providing specific figures for profitability for Equipment Sales and Aftermarket Services, Management does acknowledge that the latter is more stable, with considerable higher margins. Analysts' consensus points to Aftermarket Services gross profitability being 2.5-3 times higher than that of the Equipment Sales business. As I projected an increasing relative weight of Aftermarket Services on Total Revenues, it is reasonable to expect gross profitability to increase relative to its historical average of 37%. Based on Management conference calls, Annual reports and analysts' consensus, I expect operating profitability to evolve towards 38% in the period 2016-2018, and to remain stable from then on *(Source: Deutsche Bank, Morgan Stanley and J.P. Morgan Cazenove's Investment Research Notes, Atlas Copco Annual Reports and Conference Calls).*

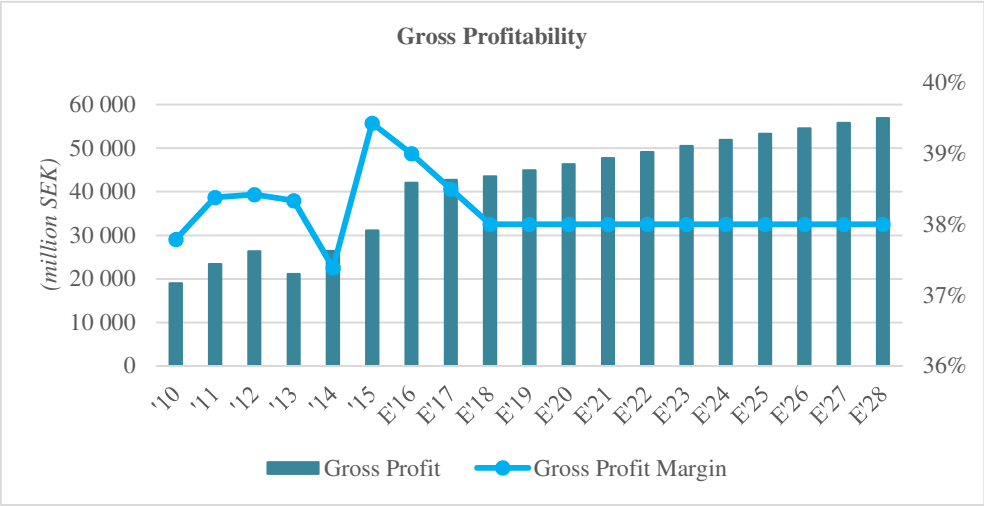


ILLUSTRATION 20 – Gross Profitability Projections. *Source: Own calculations.*

4.1.2.3 Operating Income and Expenses

Marketing Expenses

Marketing expenses are expected to evolve linearly to their historical weight relative to Revenues, which is 10%.

Administrative Expenses

Administrative expenses are expected to evolve linearly to their historical weight relative to Revenues, which is 1.5%.

Research and Development Expenses

Research and development expenses are expected to evolve linearly to their historical weight relative to Revenues, which is 2.5%.

Other Operating Income and Expenses

Other operating income and expenses are expected to evolve linearly to their historical weight relative to Revenues, which is 0.4% and 0.3%, respectively.

Provisions

Provisions are estimated to be 5% of trade receivables for the forecasted period, which corresponds to its 10-year historical average.

4.1.2.4 Depreciation and Amortization Expenses

Assuming that there will be no changes in depreciation and amortization accounting methods, it is reasonable to assume that these should keep a stable ratio to previous year's Total Net Property, Plant and Equipment (PPE) and Net Intangible Assets.

Net Intangible Assets are expected to remain constant throughout the forecasted period. Net Property Plant and Equipment should develop according the following:

$$Net\ PPE_t = Net\ PPE_{t-1} - Depreciation\ Expenses_t + Capital\ Expenditures_t$$

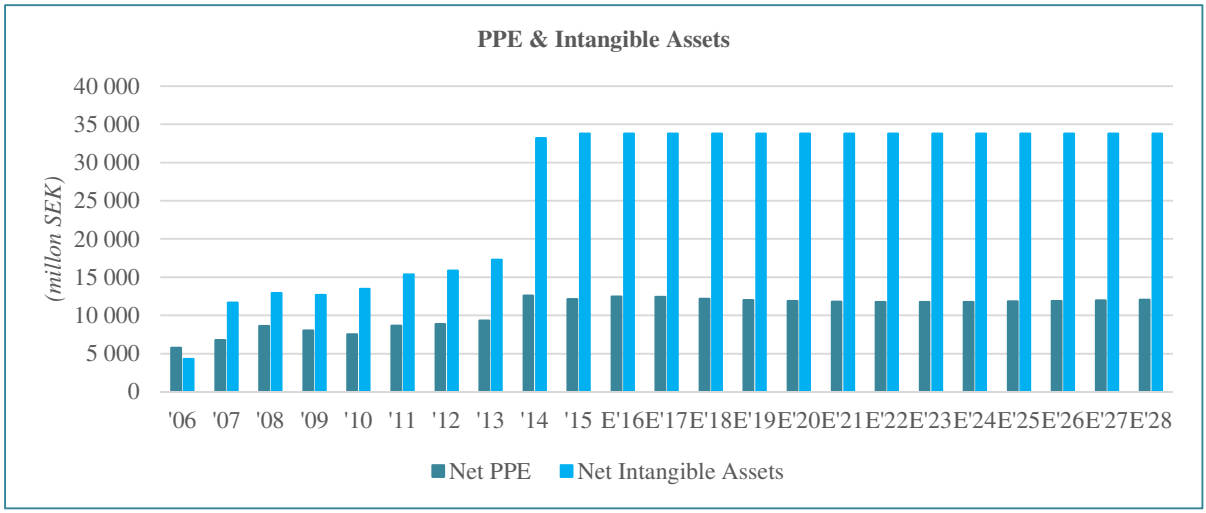


ILLUSTRATION 21 – Fixed and Intangible Assets projections. *Source: Own calculations.*

The considerable increase in Intangible Assets in 2014 was due to a one-time event, namely the acquisition of Edwards Group Ltd., which gave origin to the recognition of Goodwill.

I expect depreciation and amortization expenses to revert to its historical average relative weight of 12% of previous year's Total Net PPE and Net Intangible Assets in the period 2016-2018, and to keep at that level from then on.

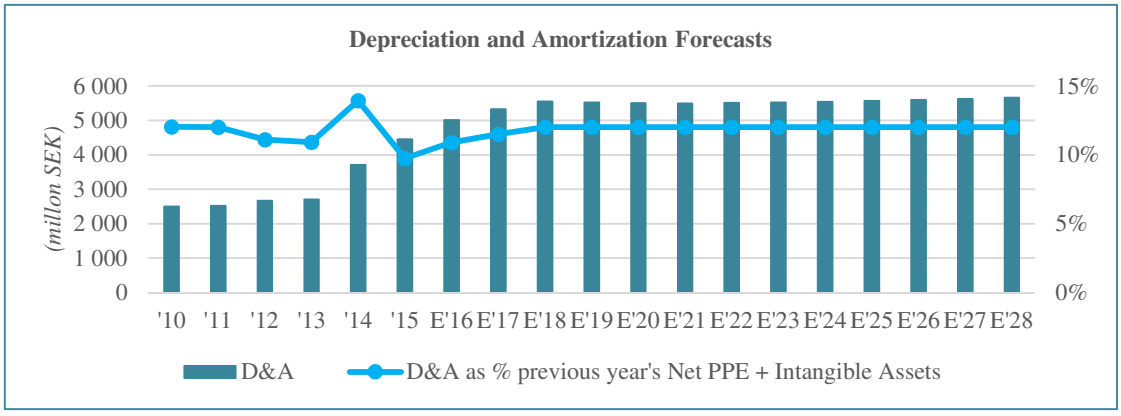


ILLUSTRATION 22 – D&A expenses projections. *Source: Own calculations*

4.1.2.5 Capital Expenditures (CAPEX)

Notwithstanding the year following the 2008 financial crisis, CAPEX was kept fairly stable as a percentage of Atlas Copco's Revenues. There are no indications from Management that this policy is expected to change so I project it to revert linearly to its ten-year average of 4.5% in the period 2016-2018, and then to linearly converge to the amount of annual depreciation by 2028.

By then it will represent around 3.7% of Revenues, which has been historically the lowest level reached and can thus be reasonably assumed as the level of maintenance CAPEX.

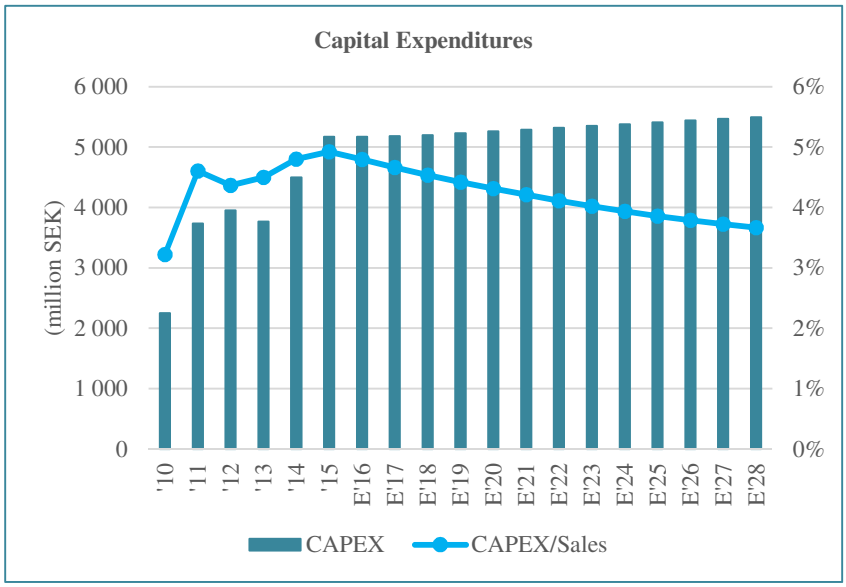


ILLUSTRATION 23 – CAPEX projections. *Source: Own calculations*

4.1.2.6 Net Working Capital

For the purpose of this dissertation, Net Working Capital (NWC) is computed as follows:

$$NWC = Trade\ Receivables + Inventories + Other\ Current\ Receivables - Accounts\ Payable - Income\ Tax\ Liabilities - Other\ Current\ Liabilities$$

The different components of Net Working Capital are forecasted according to the following reasoning:

- **Trade Receivables:** Historically, these have been very stable, relative to Revenues. As I do not expect a change in client credit policy, it is reasonable to assume that trade receivables will keep representing 20% of Revenues, or around 72 days of sales outstanding.
- **Inventories:** Inventories have historically represented around 32% of Cost of Goods Sold. I project that they will evolve to such figure in the period 2016-2018 and then remain at that level for the foreseeable future, or around 117 days sales of inventory – the number of days Atlas needs to turn its inventories into sales.
- **Other Current Receivables:** These are mainly composed of VAT claims and advances to suppliers. They are expected to maintain its historical relative weight of 5% of Total Revenues.

- **Accounts Payable:** Expected to evolve to its historical average relative weight of 13% of Purchases[6] by 2018 and then remain at that level for the foreseeable future.
- **Income Tax Liabilities:** Expected to remain at their historical average weight of 1.7% of Total Revenues for the foreseeable future.
- **Other Current Liabilities:** Mostly composed of accrued operational expenses and interest and advances from customers. They are expected to maintain its historical relative weight of 21% of Purchases in the future.

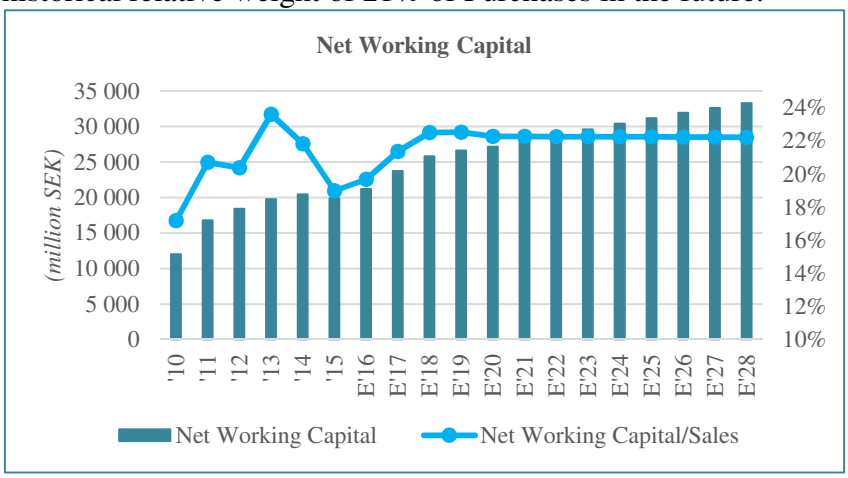


ILLUSTRATION 24 – Net Working Capital Projections. *Source: Own calculations*

Net Working Capital is seen by Management as being closely linked to sales volume. Indeed, it is observable that in periods of higher volume, there is a higher investment in working capital which then decreases when volumes deteriorate. As of 2015, volume sales have decreased for the last two years but are expected to pick up in the following years and consequently, NWC is also expected to increase (see Appendix 6).

4.1.3 DCF Valuation Results

The following table details the main findings of the proposed Discounted Cash Flow model, based on the assumptions and formulas mentioned before (all figures, except *per share* components, are in million SEK):

[6] $Pruchases_t = COGS_t + Ending\ Inventories_t - Beginning\ Inventories_t$

Component	Value
PV of Explicit Period	151.719
PV of Terminal Value	206.105
Estimated Enterprise Value	**357.824**
Net Debt	25.091
Estimated Equity Value	**332.733**
# A shares outstanding	*839*
# B shares Outstanding	*390*
Historical Discount factor to B shares[7]	*6,4%*
Fair Value *per* A Share	**276,23**
Fair Value per B Share	***258,48***

ILLUSTRATION 25 – DCF Valuation model results

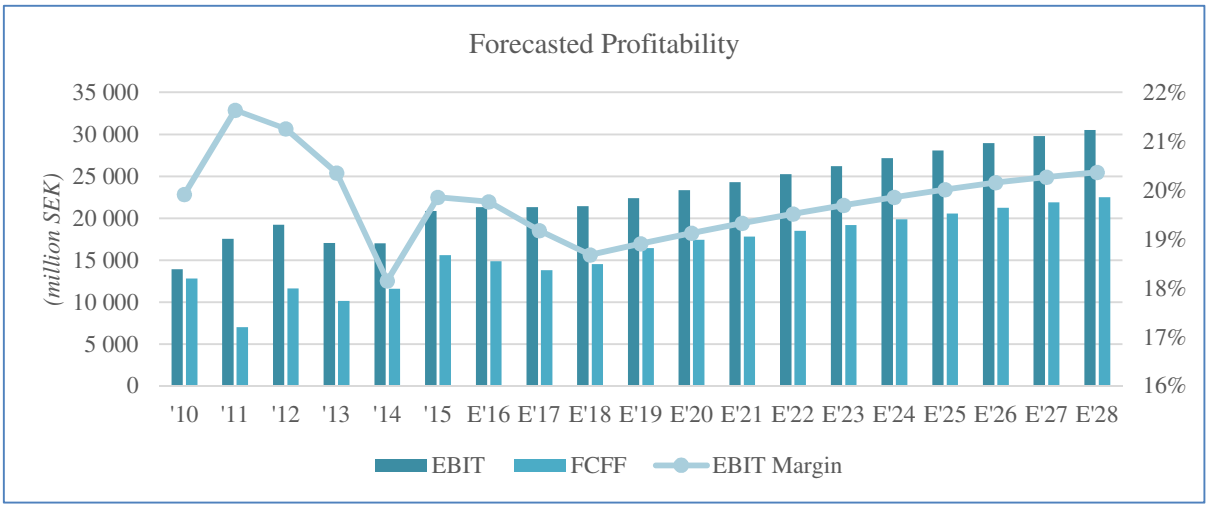


ILLUSTRATION 26 – Forecasted profitability

An important point to be made is that 42% of the company's value derives from the explicit period. This figure is considerably higher than what is usually seen in this type of analysis. With all due caution and conservatism, this fact gives me additional comfort about the final valuation result, since one can usually forecast the near-term future with a better degree of certainty than the long-term future.

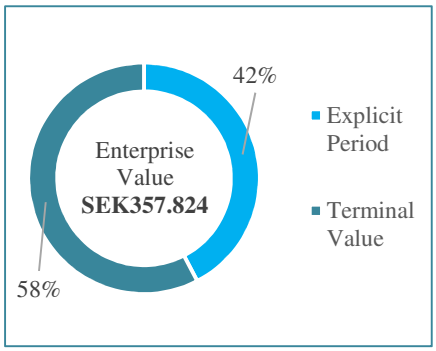


ILLUSTRATION 27 – Sources of value

For the purpose of this dissertation, I will focus on A shares valuation. As of the day this estimates were computed (December 1st 2015), shares market price is SEK 233.8. This represents an undervaluation of around 16% to its fair value. The detailed set of Cash Flow projections are presented in Appendix 8.

[7] Discount Factor computed through a Regression Analysis between monthly share prices for A and B shares, for the period Dec 2009 – Sep 2015 (70 observations). Adjusted R^2 = 99,6%.

4.1.4 Sensitivity analysis

An estimation exercise like the one presented above is naturally subject to a set of assumptions and forecasts that, despite being constructed to the best of my knowledge, are prone to materialize differently in the future. This may have a considerable impact on Atlas Copco valuation.

Two of the most crucial factors in determining the company's value are the Weighted Average Cost of Capital (*WACC*) and the terminal growth rate (g) of Free Cash Flows to the Firm.

Appendix 11 shows a considerable sensitivity of the share intrinsic value to both WACC and terminal growth rate. A critical analysis to its meaning and implications must be made.

Assessing the sensitivity to terminal growth rate, I attribute it a relatively small probability of it actually being different that the 2% used in the valuation. Recalling that it represents the long-term inflation rate, it is a figure soundly regarded by economists as the rate at which economies run smoothly, prices are predictably stable and contributes the most to maximum employment. Accordingly, Central Banks primary responsibility is to make sure that the target rate is met. As such, although it has a high impact on Atlas Copco valuation, it is unlikely to be materially different from the rate used.

As for the WACC, my analysis is fundamentally different. First and foremost, one must bear in mind that, given Atlas Copco capital structure, its cost of capital is primarily driven by the required rate of return of shareholders. Cost of equity is determinately linked to both a risk premium return – which is not expected to suffer material changes over time, and a risk-free return, assumed to be the return on Swedish 10-year sovereign bonds.

Following the global financial crisis in 2008 and the European sovereign debt crisis in 2010, politicians and economic leaders have put in place a series of actions to ensure economic recovery and the normalization of the credit market – with what are now known as the Quantitative Easing Programmes. These programmes have brought interest rates to record-low levels, with several long-term sovereign bonds yielding 0% interest rate.

A low-yield environment has, consequently, contracted investors' required rate of return. This is, in my opinion, the main reason to the low WACC that we observe for Atlas Copco. Despite high expectations for an increase in interest rates by the US FED, European Central Bank has given, to this date, no signs of wishing to decelerate its Quantitative Easing Programme. As such, investors may expect interest rates to keep low for the near-term. They should nonetheless remain vigilant on this issue, as eventually interest rates are expected to rise

to historical levels. Reflected in Appendix 11, such event would have a considerable impact on Atlas Copco valuation.

A third comment I consider pertinent is relative to the impact of exchange rates on Atlas Copco's profitability. As a global player, Atlas Copco has a considerable exposure to different currencies, being the most important ones the USD, EUR, AUD, CAD, CNY and ZAR.

Atlas Copco net operational transaction exposure as of December 31, 2014 was as following:

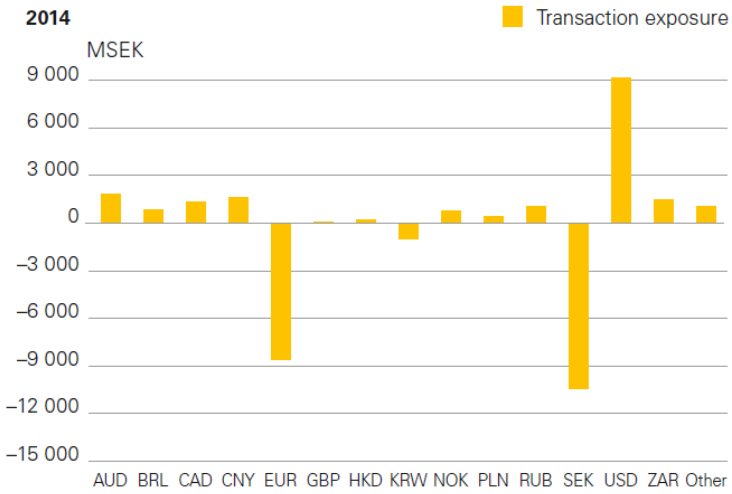


ILLUSTRATION 28 - Net operational transaction exposure to different currencies. *Source: Atlas Copco 2014 Annual Report*

Assuming this net exposure is to be maintained constant in the future, it is possible to assess my valuation model's sensitivity to exchange rates (only USD and EUR are tested, for the sake of materiality). By imposing a cumulative change in exchange rates of -5%, -2.5%, 2.5% and 5%, linearly distributed across Explicit Period, I have reached the following valuations for Atlas Copco's A shares:

	Currency Movement Vs. SEK			
	-5%	**-2,5%**	**2,5%**	**5%**
USD	275,85	276,04	276,43	276,62
EUR	276,68	276,46	276,08	275,78

The table indicates, for instance, that a cumulative devaluation of 5% of the USD relative to SEK over the period 2016-2028, would result in a valuation of Atlas A shares of SEK 275.85.

One can thus conclude that net exposure to major currencies has a marginal effect on the company's valuation. This can also be hinted by the fact that, despite recent strong devaluations of SEK against USD and EUR, Atlas profitability measures have been influenced more by a shift towards aftermarket services and less by such currency moves. It indicates an

effective match between inflows and outflows in the same currencies, since only small hedging financial instruments are used.

4.2 Relative Valuation

Relative valuation gives a good insight about how other market players value the business in question. It helps framing the discounted cash flow valuation exercise into current market sentiment and makes the analysis more solid, by assessing the plausibility of cash flow forecasts and identifying the differences and similarities between the company's performance and that of its competitors.

Following the Literature Review section, relative valuation is done by comparing how similar companies' shares are trading, relative to key performance metrics. These materialize into ratios that are then applied to the Atlas Copco's performance metrics to estimate its market value.

4.2.1 Peer Group

Main competitors are identified by Atlas Copco in its Annual Report. Even still, it is hard to find one that fits what is prescribed in the Literature Review about an adequate peer group selection. None spans its activity across such varied range as Atlas Copco does and there is also a great disparity in invested capital profitability. Despite these setbacks, I have identified the following peers:

Peer	Business Area	EBIT growth rate (FY 2016)	EBIT margin	RoIC	Dividend Yield	Debt /Equity
Sandvik AB	Industrial Machinery; Mining; Construction	8,28%	11,83%	9,22%	3,45%	41%
Ingersoll-Rand	Air Compressors; Industrial Machinery	8,25%	8,25%	4,48%	1,97%	31%
Caterpillar	Mining, Industrial Machinery; Construction	1,34%	10,96%	8,10%	2,32%	95%
SKF AB	Industrial Machinery	6,56%	9,88%	9,46%	3,24%	38%
Alfa Laval	Mining; Industry Equipment	6,09%	15,21%	13,44%	2,43%	25%
Atlas Copco	**Air Compressors; Industrial Machinery; Mining; Construction**	**2,3%**	**20%**	**24%**	**2,87%**	**9,5%**

ILLUSTRATION 29 – Atlas Copco peer group. *Source: Atlas Copco Annual Reports; Thompson Reuters; Bloomberg; Own calculations.*

4.2.2 Methodology

Peer-group multiples are based on forecasted 1-year performance metrics. Practitioners and academics consider this a solid method as market players are soundly believed to have already incorporated near-term expectations (normally, 1 year) into securities' current prices. After computing the individual trading multiples for each company, I use the median of those results to achieve the adequate multiple used in estimating Atlas Copco market value. Using the median, rather than a simple average, allows me to smoothen any circumstantial outlier and use a figure that is more suited to the industry's typical multiple.

The multiples I chose are the **Enterprise Value-to-EBITDA** (EV/EBITDA), **Enterprise Value-to-EBIT** (EV/EBIT) and **Price-to-Earnings** (P/E). Especial emphasis will be given to EV/EBIT as it allows a better comparison across companies' operating activities, not taking into account capital structure, financing models and non-operating activities. Despite the fact that price-based multiples are impacted by different capital structures, I still compute P/E as it is very commonly used in the Financial Industry and may help framing the other valuation results.

As mentioned earlier, EBITDA, EBIT and Earnings all refer to expected 2016 fiscal year figures. Enterprise Value is computed as the sum of Market Capitalization and Net Debt. Figures for EV, EBITDA and EBIT are presented in billion units of each company's reporting currency.

Price refers to share price as of December 4th, 2015. All figures are sourced from Thompson Reuters Eikon's consensus estimates.

Peer	*EV Value*	*Share Price*	*EBITDA$_{2016}$*	*EBIT$_{2016}$*	*Earnings/Share$_{2016}$*	EV/EBITDA	EV/EBIT	P/E
Sandvik AB	*147,8*	*82,2*	*14,8*	*10,2*	*5,2*	10,0	14,5	15,7
Ingersoll-Rand	*19,4*	*58,4*	*2,0*	*1,6*	*4,0*	9,7	11,8	14,5
Caterpillar	*73,7*	*69,8*	*5,9*	*3,2*	*3,7*	12,5	23,1	18,9
SKF AB	*89,1*	*147,5*	*10,9*	*8,6*	*12,4*	8,2	10,3	11,9
Alfa Laval	*82,0*	*152,8*	*6,9*	*5,5*	*9,6*	11,9	15,0	15,9
					Median	**10,0**	**14,5**	**15,7**

ILLUSTRATION 30 – Peer group multiples. *Source: Companies Annual Reports; Thompson Reuters, Own calculations.*

4.2.3 Relative Valuation Results

The following table presents the estimates for Atlas Copco's fair value, according to the different metrics:

Component	EV/EBITDA	EV/EBIT	P/E
Enterprise Value	234.954	308.884	-
Net Debt	27.581	25.091	-
Equity Value	234.954	283.793	230.271
Fair Value per A Share	**195,06**	**235,60**	**191,17**
Fair Value per B Share	**182,52**	***220,46***	***178,88***

ILLUSTRATION 31 – Relative Valuation model results.

The results show a valuation lower than what is estimated through the discounted cash flow exercise.

My initial comment is that P/E multiples should be regarded with great reserve, for the following reasons:

- Atlas Copco operates with a significantly different capital structure than its peers, relying more heavily on equity.
- Net earnings are impacted by non-operating income and expenses that are, most of the time, one-time events.

EV/EBITDA and EV/EBIT point to a valuation of between SEK195 and SEK236. With A shares of Atlas Copco trading at SEK233.8 as of the moment that this analysis was done, that would indicate that the market is properly recognizing its fair value.

Bearing in mind the comment made in DCF Valuation Results section**,** where I acknowledge that the final share value is critically impacted by a low cost of capital, I dare say that it is still a higher-quality estimate than Relative Valuation results. That is because the latter do not take into account the substantially higher RoIC that Atlas Copco has consistently presented relative to its peers. As detailed in the Literature Review, EV multiples are impacted by companies' profitability – more profitable companies are expected to trade at a premium relative to its less profitable peers.

Atlas Copco Management makes it clear on its Financial Statement that one of their strategical targets is to deliver a consistent high RoIC. The next segment presents a profitability valuation method that aims at capturing that fact.

4.3 Profitability Valuation

Profitability Valuation focuses on the company's ability to create value each year. Such measure of surplus value creation is usually called **Economic Value Added** (EVA) or **Economic Profit** (EP). It is computed as follows:

$$EP_t = Invested\ Capital_{t-1} * (RoIC_t - WACC)$$

Atlas Copco's **Invested Capital** (IC) is estimated as follows:

$$IC_t = Interest\ bearing\ Liabilities_t + Equity\ Book\ Value_t - Excess\ Cash_t$$

Return on Invested Capital is defined as:

$$RoIC_t = \frac{EBIT * (1 - effective\ tax\ rate)}{Average\ Invested\ Capital_t}$$[8]

As it is clearly explicit in the formulas above, one of the critical drivers of a company's value is the capability to generate returns on its invested capital higher than its cost of capital. The emphasis put on RoIC by Atlas Copco Management makes this model a suitable one to estimate the company's intrinsic value.

4.3.1 Methodology

The implementation of this model is similar to the DCF model. EP is estimated each year, for the same explicit period used for the DCF and it is then assumed to reach steady-state, when it is expected to grow at a constant rate of 2%. That perpetuity will amount for the Terminal Value of the company and is computed as follows:

$$TV_{2028} = \frac{Economic\ Profit_{2028} * (1 + g)}{\frac{WACC - g}{(1 + WACC)}}$$

The fair value of the company equals the book value of the present invested capital plus the present value of the future economic profits:

$$EV_0 = IC_0 + \frac{EP_{2016}}{(1 + WACC)^1} + \frac{EP_{2017}}{(1 + WACC)^2} + \cdots + \frac{EP_{2028} + TV_{2028}}{(1 + WACC)^{13}}$$

4.3.2 Main Assumptions

This model shares some of the assumptions detailed in the DCF Valuation model. The additional critical assumptions are as follows:

Interest Bearing Liabilities

Total book value of debt represents around 60% of book value of Equity. As Management indicates in its conference calls and financial statements that it is expected to

[8] $Average\ Invested\ Capital_t = \frac{Invested\ Capital_t + Invested\ Capital_{t-1}}{2}$

maintain the same capital structure, I forecast that such ratio is to be stable in the future. This also include the post-employment benefits liabilities, which I forecast to remain constant throughout.

Interest Expenses

Interest Expenses are expected to represent around 5% of total debt, which is approximately its historical value.

Retained Earnings

Management assumes as one of its strategic goals to maintain a dividend payout ratio of around 50%. As such, only the remaining of Net Income is expected to be recorded as Retained Earnings and accrue to Total Equity.

4.3.3 Profitability Valuation Results

The projections I made show a steady increase in Invested Capital. Since it is not reliably feasible to model future acquisitions, I assume that there will be none in the future. So such increase is mainly the result of the accumulation of retained earnings. Also important to note is the favorable evolution of RoIC, from 21% to around 27% by 2028. This figure corresponds roughly to the historical average of Atlas' RoIC and mirrors Management's objective to keep a sustained high level of Invested Capital Profitability.

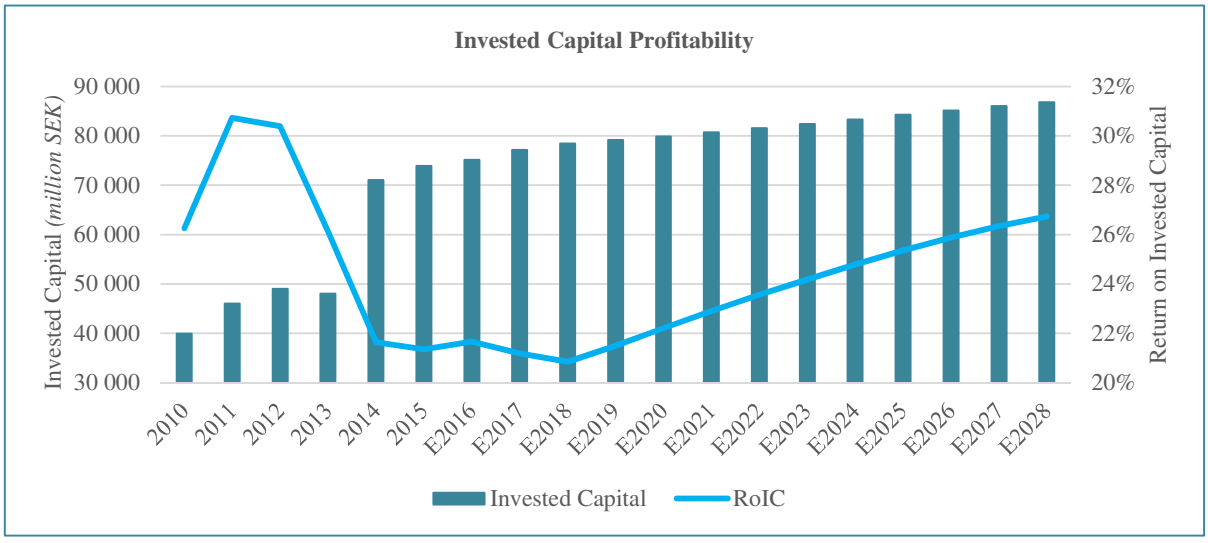


ILLUSTRATION 32 – Invested Capital profitability projection. *Source: Own calculations*

The abrupt increase in Invested Capital, and consequent drop in RoIC in 2014, was due to a major acquisition of the company Edwards Group Ltd, a developer and manufacturer of vacuum products and abatement systems, which significantly enlarged Atlas Copco's Balance Sheet.

Economic Profit is also expected to evolve positively during the Explicit Period, presenting a CAGR for the period 2016-2028 of around 3.4%.

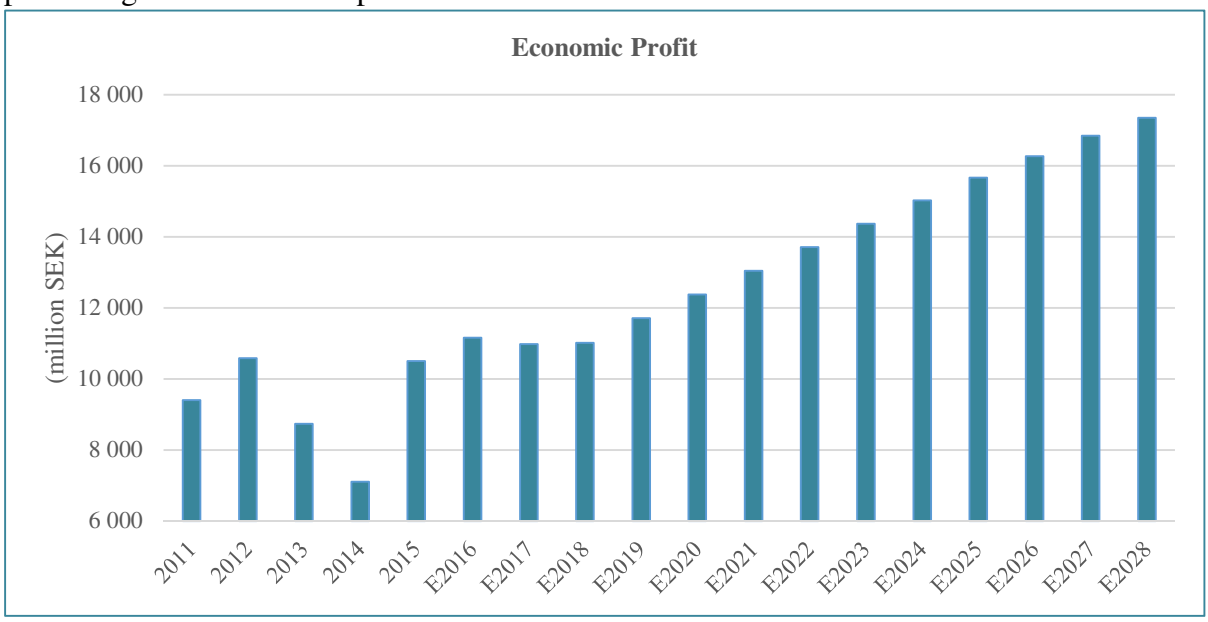


ILLUSTRATION 33 – Economic Profit projections. *Source: Own calculations*

The following table details the valuation results based on the projections and assumptions discussed above (all figures, except *per share* components, are in million SEK):

Component	Value
Enterprise Value	**346.809**
Net Debt	25.091
Market Value of Equity	**321.717**
# A shares outstanding	*839*
# B shares Outstanding	*390*
Historical Discount factor to B shares	*6,4%*
Fair Value per A Share	**267,09**
Fair Value per B Share	**249,92**

ILLUSTRATION 34 – Economic Profit model results

The final figure is fairly similar to what is obtained through the DCF valuation. That happens because both methods rely, for the most part, on the same assumptions. It also corroborates the idea that the ability to generate higher return on its invested capital enables Atlas to be valued at a premium, compared to its peers.

Based on the current price of A shares of SEK 233.8, as of December 1st 2015, my model (Appendix 9) leads to the conclusion that the market is undervaluing Atlas Copco's fair price by around 13%.

A brief sensitivity analysis to WACC and terminal growth rate yields similar results to the analysis done on DCF valuation results (Appendix 12). The fair value of Atlas is considerably sensitive to the cost of capital assumed in the model. That is not an indication of poor modelling quality *per se*, as I believe that required rate of returns assumed in WACC

computations accurately mirror current market conditions, but it does indicate that investors must pay close attention to the impact of future macroeconomic changes on companies' valuations.

4.4 Conclusion

The development of this valuation exercise made clear that Atlas Copco has a set of characteristics that sets it apart from its peers. Two of them are crucial: its higher exposure to the aftermarket services, which makes it more resilient to cyclicality of the Capital Goods Industry; and its asset-light structure, which enables it to deliver more than double the Return on Invested Capital of its closest peers. These singularities are not captured by Relative Valuation models, but are nonetheless important sources of value. As such, based on the DCF and Economic Profit models, I estimate Atlas Copco A shares to be worth between SEK 267 and SEK 276.

5. Investment Banking Report Analysis

As previously stated, equity valuation is not a static, strict set of rules to be applied uniformly to all valuation exercises. Rather, it can be approached and put into practice according to different perspectives. In this section, I present an interesting comparison between my valuation proposal and one from a renowned Investment Bank.

For this purpose, I chose an Equity Research Report on Atlas Copco A shares, published by Credit Suisse AG (CS) on 16th July, 2015. The report follows the 2nd Quarter Results Presentation, containing a detailed analysis of Atlas' financial performance, industry analysis, and a valuation estimate using the Discounted Cash Flow method. Since no other methods are used, I will restrict the comparison of Credit Suisse's report to my DCF proposal.

Credit Suisse uses 2014 figures as a base for its projections. These are estimated for an explicit period that is divided into two sub-periods: 2015 to 2017, where detailed forecasts are used for estimating FCFF; and 2018 to 2024, where broader assumptions are used. Atlas is assumed to achieve its steady-state by the end of 2024. Notwithstanding the similarity in structure, my model projects a total explicit period of 13 years.

The first remarkable difference emerges in profitability forecasts. Credit Suisse assumes EBIT margin to be at 22% from 2018 onwards. This seems to me an overly optimistic assumption, since it has never been in that level before and there are no realistic expectations of a major breakthrough in the development of more profitable products. I assume EBIT margin to remain at 20%.

CAPEX is also forecasted differently. CS estimates for 2015-2017 are nearly half as what I project. That is because it also projects asset sales and presents a final figure of net CAPEX that deducts the proceeds of those sales from gross CAPEX. I do not feel comfortable in reliably estimating asset sales, so I do not take them into account.

Finally, it is interesting to observe CS estimates for Atlas Copco terminal growth rate and cost of capital. Similar to my projections, CS analysts assume a 2% terminal growth rate, corroborating the idea that in steady-state Atlas Copco will only grow through inflation price increases. On the other hand, CS estimates the weighted average cost of capital to be 8%, contrasting with my estimate of 6.57%. Since CS does not disclose any further information on its calculations, I can only state that it coincides with the cost of capital that Atlas Copco mentions in its 2014 Annual Report. I was not able to retrieve any comment from Atlas Copco Management about the foundations for this assumption.

The following table presents a summary of the critical characteristics of both models:

	CS DCF Model	Dissertation DCF Model
Valuation Model	DCF	DCF; Economic Profit
Explicit Time Period	2014-2024	2015-2028
Steady-state EBIT Margin	22%	20%
WACC	8%	6,57%
Terminal Growth Rate (g)	2%	2%
Valuation Estimate	**SEK 305**	**SEK 267-276**

ILLUSTRATION 35 – Valuation models comparison

To conclude, despite the fact that valuation estimates differ, they only do so by about 10%. More importantly, they both point to the idea that Atlas Copco was undervalued by the time the analyses were made. I would also argue that the economic profitability analysis presented in this dissertation strengthens the overall understanding of Atlas Copco's business.

6. Conclusion

Writing a dissertation on Equity Valuation was, first and foremost, an unparalleled learning experience on a subject that has always struck me as one of the most interesting in Finance. While preparing the Literature Review, I came across very different ways of estimating the financial value of an investment opportunity. They rely on different assumptions and perspectives to propose models that capture the value drivers of an investment and provide users with a final estimate of how much is that investment worth. Despite their limitations and rigidity, these models fulfill the important task of making the user more knowledgeable about the fundamental characteristics of such investment and provide a rough, but educated estimate of its value.

The learning process was further enhanced by the practical application of that theory in Atlas Copco valuation exercise. Having to choose the right models to use and how to adjust them to the specificities of the company and its business, truly made me think about, understand and appreciate the subtleties of this field of study. I opted to rely on the Discounted Cash Flow and Economic Profit models to estimate Atlas Copco shares' value at between SEK 267 and SEK 276.

Finally, when comparing my work with that of a team of analysts from a reputed Investment Bank, I was able to understand how the same company is prone to be analyzed through different angles, and how that can impact the assessment of its intrinsic value. A seasoned investor should weigh all of these approaches when making his investment decision.

As I come out of this experience a more mature, well-rounded financial analyst, I truly hope that this dissertation is helpful to all of those who wish to deepen their knowledge about this subject and about Atlas Copco, in particular.

Appendix

Appendix 1 – Adjustments to Financial Statements

A thoughtful analyst must take the time to critically analyze accounting decisions and estimations and, if need be, adjust the reported financial statements as to obtain a more accurate picture of the company's business. Such adjustments must only be made if they are found to materially impact the reported financial item in consideration.

The reader must be aware that throughout this dissertation, all the financial analysis and valuation are based on adjusted figures, where adjustments were deemed necessary. Presented below are the analysis on items I thought to be more sensitive to potential adjustments, given the knowledge acquired of the company's activities and the information disclosed in the Annual Reports, Results Presentations and other materials made public by Atlas Copco. I have defined, as a rule of thumb, to alter the items that have an impact equal or superior to 2% on the reported figure.

Year-end financial statements

At the time this dissertation is being written, Atlas Copco had only released its third-quarter financial results. In order to make historical comparisons easier and financial projections more consistent, I have extrapolated Atlas Copco's third-quarter figures in order to obtain the expected 2015 financial statements. The technique used was to apply to all items the same development they revealed from 2014's third quarter to year-end. I believe this will give me a fair image of what the 2015's figures will be as well as a solid basis to build my valuation projections.

Operating Leases

A lease is a contract between the owner of a given asset (the lessor) and another agent that wishes to use that asset for a certain period of time (the lessee). In exchange for the possibility of using that asset, the lessee is obliged to make periodic payments to the lessor, for the duration of the contract.

This leases can take two forms:

- Financial Leases: their major characteristic is that all the risks and rewards of owning the asset are transferred to the lessee. It is registered in the lessee's financial statements as an asset and a liability, and the monthly payments are considered depreciation and interest expenses.

- Operating Leases: there is no transfer of risks and rewards of the asset's ownership and, therefore, the monthly payments are simply accounted for as an operating expense in the lessee's income statement.

As it is clear to see, if a company opts to use this kind of contracts to undergo its production process, the choice between financial or operating leases may have a significant impact on the its balance sheet structure.

Typically, in order to avoid inflating their liabilities and debt ratios, Management prefers the use of operating leases, in a process that is commonly known as "off-balance sheet financing". The fact is that operating leases are also contractual obligations of making future, determined payments in a form that pretty much resembles a liability. As such, analysts must capitalize operating leases, where they are material, treating them as financial leases and adding them to the company´s assets and liabilities. They should also divide the expense registered between amortization of the asset and interest expense, as financial leases are considered interest-bearing liabilities.

This is done by discounting the future minimum payments prescribed in the operating leases contracts at a discount rate equivalent to the company's cost of debt, obtaining the fair value of the liability. I gathered the future lease payments from Atlas Copco's Annual Report and discounted those at the estimated cost of debt.

The results are as follows:

Impacts *(million SEK)*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	**Observations**
Impact on Assets	1.757	1.779	1.753	1.801	2.481	2.518	
as percentage of original Total Assets	*2,45%*	*2,37%*	*2,17%*	*2,05%*	*2,36%*	*2,30%*	material, **adjustment will be made** for analysis and valuation purposes
Impact on Liabilities	1.757	1.779	1.753	1.801	2.481	2.518	
as percentage of original Total Liabilities	*4,14%*	*3,84%*	*3,76%*	*3,73%*	*4,54%*	*4,02%*	material**, adjustment will be made** for analysis and valuation purposes
Impact on EBIT	63,59	46,27	43,79	46,46	44,02	33,18	
as percentage of original EBIT	*0,46%*	*0,26%*	*0,23%*	*0,27%*	*0,26%*	*0,16%*	not material**, adjustment will not be made** for analysis and valuation purposes
Impact on Interest Expenses	63,59	46,27	43,79	46,46	44,02	33,18	
as percentage of original Interest Expenses	*7,54%*	*4,36%*	*3,99%*	*3,92%*	*3,56%*	*2,18%*	material**, adjustment will be made** for analysis and valuation purposes

As stated above, the adjustments considered material will be made and incorporated into my historical analysis and valuation.

Defined benefit plans

More commonly known as pension or retirement plans, this are promises that the firm makes to its employees to make periodic payments after their retirement. In order to dully account for this obligation, the company as to make assumptions regarding the number of employees expected to retire each year, the value that has to be paid to each of those employees

and for how many years that pension is going to be paid. Those expected future cash-flows are then discounted back to the present moment, at a discount rate normally equal to the company's cost of debt, giving origin to the company's Defined Benefit Obligations. As the liability takes form, the company also sets aside financial assets and invests those Pension Plan Assets as to match the duration of the mentioned liabilities. The net value of both obligations and assets is computed every year-end and recognized in the company's Balance Sheet as net asset or net liability.

The fair value of both assets and liabilities is highly dependent on key assumptions made by Management, namely the discount rate and the life expectancy of their employees. As such, it is wise to analyse what the impact of a change in this variables would be on the company's liabilities.

Since I was unable to retrieve all the information needed to proceed with the computations, I will rely on a sensitivity analysis presented on Atlas Copco's Annual Report 2014, which yielded the following results:

Assumption	*Impact (million SEK)*	*As a percentage of total Liabilities*	Observations
+0.5 pp change in discount rate	-258	*0,5%*	not material**, adjustment will not be made** for analysis and valuation purposes
-0.5 pp change in discount rate	+277	*0,5%*	not material**, adjustment will not be made** for analysis and valuation purposes
+1 year change in life expectancy	+125	0,2%	not material**, adjustment will not be made** for analysis and valuation purposes

As no impact represents more than 2% of the stated liabilities, no adjustments will be incorporated in my historical analysis and valuation.

Appendix 2 – Market Value of Debt 2015

Debt Instruments	PV *(million SEK)*	Cash-Flows (in local currencies)								YTM	Exchange Rate to SEK
	'15	***'16***	***'17***	***'18***	***'19***	***'20***	***'21***	***'22***	***'23***		
500 MEUR 7-year bond	5.080	*13,1*	*13,1*	*13,1*	*513,1*	-	-	-	-	0,54%	9,3867
500 MEUR 10-year bond	5.148	*12,5*	*12,5*	*12,5*	*12,5*	*12,5*	*12,5*	*12,5*	*512,5*	1,22%	9,3867
800 MUSD 10-year Bond	7.321	*44,8*	*844,8*	-	-	-	-	-	-	1,81%	8,5219
142.5 MUSD 20-year bond	1.478	*11,7*	*11,7*	*11,7*	*154,2*	-	-	-	-	2,49%	8,5219
Bank Loans	5.821										
Finance Leases	178										
Capitalized Op. Leases	2.518										
Net Pension Liability	2.542										
Total Debt	**30.086**										

ILLUSTRATION 36 – Source: Atlas Copco Annual Reports; Thompson Reuters; http://www.boerse-frankfurt.de/.

Appendix 3 – Historical Capital Structure

(million SEK)	2010	2011	2012	2013	2014	E2015
Market Value of Debt	*23.100*	*27.574*	*25.200*	*29.265*	*31.069*	*30.086*
Cash and Cash Equivalents	*14.264*	*5.716*	*12.416*	*17.633*	*9.404*	*10.769*
Operating Cash (5.5% of Sales)	*3.843*	*4.466*	*4.979*	*4.614*	*5.155*	*5.774*
Excess Cash	10.421	1.250	7.437	13.019	4.249	4.994
Market Value of Net Debt	12.680	26.325	17.764	16.246	26.819	25.091
Market Value of Equity	166.653	155.542	195.142	202.228	264.656	266.733
Net Debt/Enterprise Value	7%	14%	8%	7%	9%	8%
Equity/Enterprise Value	93%	86%	92%	93%	91%	92%

ILLUSTRATION 37 - Source: Atlas Copco Annual Reports; Thompson Reuters; Own calculations

Appendix 4 – Balance Sheet Forecast

(million SEK)	**2013**	**2014**	**2015**	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026	E2027	E2028
Intangible Assets	17.279	33.197	33.789	33.789	33.789	33.789	33.789	33.789	33.789	33.789	33.789	33.789	33.789	33.789	33.789	33.789
Rental Equipment	2.420	3.177	3.077	3.238	3.334	3.441	3.550	3.659	3.770	3.881	3.991	4.100	4.208	4.310	4.408	4.496
Other property, plant and equipment	6.907	9.433	9.069	9.236	9.099	8.753	8.465	8.229	8.038	7.887	7.770	7.684	7.626	7.591	7.579	7.579
Investments in associated companies	101	115	2.075	2.075	2.075	2.075	2.075	2.075	2.075	2.075	2.075	2.075	2.075	2.075	2.075	2.075
Other financial assets	2.316	1.810	1.810	1.810	1.810	1.810	1.810	1.810	1.810	1.810	1.810	1.810	1.810	1.810	1.810	1.810
Other receivables	23	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Deferred tax assets	961	1.549	1.549	1.549	1.549	1.549	1.549	1.549	1.549	1.549	1.549	1.549	1.549	1.549	1.549	1.549
Total non-current assets	**30.007**	**49.337**	**51.425**	**51.753**	**51.712**	**51.473**	**51.294**	**51.167**	**51.087**	**51.046**	**51.040**	**51.064**	**51.113**	**51.181**	**51.266**	**51.354**
Inventories	16.826	18.364	18.261	19.751	21.188	22.755	23.474	24.201	24.933	25.665	26.394	27.117	27.831	28.505	29.152	29.735
Trade receivables	16.619	19.903	21.046	21.585	22.227	22.939	23.664	24.397	25.134	25.872	26.607	27.336	28.056	28.735	29.387	29.975
Income tax receivables	309	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Other receivables	4.798	5.632	5.632	5.396	5.557	5.735	5.916	6.099	6.283	6.468	6.652	6.834	7.014	7.184	7.347	7.494
Other financial assets	1.697	2.150	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674
Cash and cash equivalents	17.633	9.404	10.769	20.629	31.124	42.214	53.840	65.855	78.267	91.084	104.308	117.939	131.975	146.441	161.287	176.526
Assets held for sale	2	11	41	41	41	41	41	41	41	41	41	41	41	41	41	41
Total current assets	**57.885**	**55.945**	**57.904**	**69.557**	**82.291**	**95.838**	**109.090**	**122.748**	**136.813**	**151.284**	**166.156**	**181.422**	**197.072**	**213.061**	**229.369**	**245.926**
Total Assets	**87.892**	**105.282**	**109.329**	**121.310**	**134.003**	**147.311**	**160.383**	**173.915**	**187.900**	**202.331**	**217.196**	**232.486**	**248.185**	**264.242**	**280.635**	**297.280**

(million SEK)	**2013**	**2014**	**2015**	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026	E2027	E2028
Share Capital	786	786	786	786	786	786	786	786	786	786	786	786	786	786	786	786
Other paid-in capital	5.743	6.037	6.037	6.037	6.037	6.037	6.037	6.037	6.037	6.037	6.037	6.037	6.037	6.037	6.037	6.037
Reserves	-963	4.239	4.239	4.239	4.239	4.239	4.239	4.239	4.239	4.239	4.239	4.239	4.239	4.239	4.239	4.239
Retained earnings	34.081	39.513	35.467	42.967	50.620	58.181	65.706	73.510	81.592	89.949	98.579	107.477	116.637	126.052	135.697	145.552
Equity attributable to owners	**39.647**	**50.575**	**46.529**	**54.029**	**61.682**	**69.243**	**76.768**	**84.572**	**92.654**	**101.011**	**109.641**	**118.539**	**127.699**	**137.114**	**146.759**	**156.614**
Non-controlling interests	147	178	162	162	162	162	162	162	162	162	162	162	162	162	162	162
Total Equity	**39.794**	**50.753**	**46.691**	**54.191**	**61.844**	**69.405**	**76.930**	**84.734**	**92.816**	**101.173**	**109.803**	**118.701**	**127.861**	**137.276**	**146.921**	**156.776**
Borrowings	19.997	22.182	28.670	31.973	36.488	40.949	45.389	49.993	54.761	59.692	64.784	70.034	75.438	80.993	86.684	92.498
Post-employment benefits	1.414	2.531	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542
Other liabilities	392	1.070	1.624	1.624	1.624	1.624	1.624	1.624	1.624	1.624	1.624	1.624	1.624	1.624	1.624	1.624
Provisions	682	888	888	1.079	1.111	1.147	1.183	1.220	1.257	1.294	1.330	1.367	1.403	1.437	1.469	1.499
Deferred tax liabilities	1.027	1.127	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292	1.292
Total non-current liabilities	**23.513**	**27.798**	**35.016**	**38.511**	**43.058**	**47.554**	**52.030**	**56.671**	**61.476**	**66.444**	**71.573**	**76.859**	**82.299**	**87.888**	**93.612**	**99.455**
Borrowings	5.595	2.284	1.020	1.138	1.298	1.457	1.615	1.779	1.948	2.124	2.305	2.492	2.684	2.882	3.084	3.291
Trade payables	6.418	7.876	10.053	9.875	9.569	9.956	10.270	10.588	10.908	11.228	11.547	11.864	12.176	12.471	12.754	13.009
Income tax liabilities	845	1.602	1.602	1.835	1.889	1.950	2.011	2.074	2.136	2.199	2.262	2.324	2.385	2.442	2.498	2.548
Other liabilities	10.662	13.475	13.354	13.825	14.353	14.933	15.405	15.882	16.362	16.843	17.321	17.796	18.264	18.707	19.131	19.514
Provisions	1.065	1.493	1.592	1.935	1.992	2.056	2.121	2.187	2.253	2.319	2.385	2.450	2.515	2.576	2.634	2.687
Total current liabilities	**24.585**	**26.730**	**27.621**	**28.608**	**29.102**	**30.352**	**31.423**	**32.510**	**33.608**	**34.713**	**35.820**	**36.925**	**38.024**	**39.078**	**40.102**	**41.049**
Total Liabilities	**48.098**	**54.529**	**62.638**	**67.119**	**72.159**	**77.906**	**83.453**	**89.181**	**95.085**	**101.158**	**107.393**	**113.784**	**120.324**	**126.966**	**133.714**	**140.504**
Total Equity and Liabilities	**87.892**	**105.282**	**109.329**	**121.310**	**134.003**	**147.311**	**160.383**	**173.915**	**187.900**	**202.331**	**217.196**	**232.486**	**248.185**	**264.242**	**280.635**	**297.280**

Appendix 5 – Income Statement Forecast

(million SEK)	**2013**	**2014**	**2015**	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026	E2027	E2028
Revenues	83.888	93.721	104.988	107.927	111.133	114.695	118.318	121.983	125.669	129.359	133.034	136.679	140.279	143.676	146.937	149.876
Cost of Sales	-51.766	-58.669	-63.589	-65.835	-68.347	-71.111	-73.357	-75.630	-77.915	-80.202	-82.481	-84.741	-86.973	-89.079	-91.101	-92.923
Gross Profit	**32.122**	**35.052**	**41.399**	**42.091**	**42.786**	**43.584**	**44.961**	**46.354**	**47.754**	**49.156**	**50.553**	**51.938**	**53.306**	**54.597**	**55.836**	**56.953**
Marketing Expenses	-8.338	-9.825	-11.175	-11.438	-11.726	-12.049	-12.375	-12.702	-13.028	-13.351	-13.669	-13.980	-14.284	-14.563	-14.826	-15.053
Administrative Expenses	-4.801	-5.668	-6.400	-6.128	-6.517	-6.826	-6.883	-6.951	-7.028	-7.114	-7.206	-7.306	-7.411	-7.519	-7.630	-7.741
Research and Developments	-2.117	-2.933	-3.332	-3.367	-3.408	-3.455	-3.501	-3.543	-3.583	-3.618	-3.649	-3.676	-3.697	-3.709	-3.732	-3.762
Other operating income	514	573	356	373	390	410	430	450	471	493	515	537	560	575	588	600
Other operating expense	-331	-191	-	-208	-227	-247	-267	-289	-312	-335	-359	-384	-410	-435	-461	-487
Share of profit in associated companies	7	7	-	11	11	11	12	12	13	13	13	14	14	14	15	15
Operating Profit	**17.056**	**17.015**	**20.848**	**21.334**	**21.310**	**21.428**	**22.376**	**23.331**	**24.288**	**25.245**	**26.198**	**27.143**	**28.079**	**28.959**	**29.789**	**30.524**
Financial Income	394	313	524,94	540	556	573	592	610	628	647	665	683	701	718	735	749
Financial Expenses	-1.184	-1.237	-1.523	-1.656	-1.889	-2.120	-2.350	-2.589	-2.835	-3.091	-3.354	-3.626	-3.906	-4.194	-4.488	-4.789
Profit before tax	**16.266**	**16.091**	**19.850**	**20.218**	**19.976**	**19.882**	**20.618**	**21.352**	**22.081**	**22.801**	**23.508**	**24.200**	**24.874**	**25.484**	**26.035**	**26.484**
Income tax expense	-4.184	-3.916	-4.849	-4.913	-4.854	-4.831	-5.010	-5.189	-5.366	-5.541	-5.713	-5.881	-6.044	-6.192	-6.327	-6.436
Profit for period	**12.082**	**12.175**	**15.000**	**15.305**	**15.122**	**15.050**	**15.608**	**16.164**	**16.715**	**17.260**	**17.796**	**18.320**	**18.830**	**19.291**	**19.709**	**20.048**
Dividends (50% Net Income)			*7.500*	*7.652*	*7.561*	*7.525*	*7.804*	*8.082*	*8.358*	*8.630*	*8.898*	*9.160*	*9.415*	*9.646*	*9.854*	*10.024*

Appendix 6 – Net Working Capital

(million SEK)	**2013**	**2014**	**2015**	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026	E2027	E2028
(+)Trade Receivables	16.619	19.903	21.046	21.585	22.227	22.939	23.664	24.397	25.134	25.872	26.607	27.336	28.056	28.735	29.387	29.975
(+) Other Receivables	4.249	5.138	5.632	5.396	5.557	5.735	5.916	6.099	6.283	6.468	6.652	6.834	7.014	7.184	7.347	7.494
(+)Inventories	16.826	18.364	18.261	19.751	21.188	22.755	23.474	24.201	24.933	25.665	26.394	27.117	27.831	28.505	29.152	29.735
(-)Income tax Liabilities	845	1.602	1.602	*1.835*	1.889	1.950	2.011	2.074	2.136	2.199	2.262	2.324	2.385	2.442	2.498	2.548
(-)Trade Payables	6.418	7.876	10.053	9.815	9.317	9.048	9.333	9.738	10.034	10.331	10.627	10.922	11.212	11.487	11.756	11.996
(-)Other Liabilities	10.662	13.475	13.354	13.847	14.040	14.632	15.076	15.731	16.209	16.689	17.167	17.643	18.112	18.557	18.990	19.378
Net Working Capital	**19.769**	**20.452**	**19.930**	**21.235**	**23.725**	**25.800**	**26.634**	**27.154**	**27.970**	**28.785**	**29.596**	**30.399**	**31.191**	**31.938**	**32.644**	**33.283**
Investment in NWC	**1.352**	**683**	**-522**	**1.305**	**2.489**	**2.076**	**834**	**520**	**816**	**815**	**811**	**803**	**792**	**746**	**706**	**639**

Appendix 7 – Segment Revenues Forecast

(million SEK)	**2013**	**2014**	**2015**	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026	E2027	E2028
Compressor Technique Revenues	**33.839**	**42.165**	**46.971**	**48.676**	**50.338**	**52.101**	**53.869**	**55.639**	**57.405**	**59.166**	**60.916**	**62.651**	**64.367**	**65.918**	**67.377**	**68.725**
YoY change	*-2,5%*	*24,6%*	*11,4%*	*3,6%*	*3,4%*	*3,5%*	*3,4%*	*3,3%*	*3,2%*	*3,1%*	*3,0%*	*2,8%*	*2,7%*	*2,4%*	*2,2%*	*2,0%*
as % of Total revenues	*40,4%*	*45,0%*	*44,7%*	*45,1%*	*45,3%*	*45,4%*	*45,5%*	*45,6%*	*45,7%*	*45,7%*	*45,8%*	*45,8%*	*45,9%*	*45,9%*	*45,9%*	*45,9%*
Equipment Sales	19.627	26.564	29.592	30.520	31.446	32.427	33.403	34.372	35.331	36.278	37.210	38.125	39.021	39.895	40.745	41.560
as % of Segment revenues	*58,0%*	*63,0%*	*63,0%*	*63%*	*62%*	*62%*	*62%*	*62%*	*62%*	*61%*	*61%*	*61%*	*61%*	*61%*	*60%*	*60%*
Aftermarket Services	14.212	15.601	17.379	18.156	18.892	19.674	20.466	21.267	22.075	22.888	23.706	24.525	25.346	26.022	26.632	27.165
as % of Segment revenues	*42,0%*	*37,0%*	*37,0%*	*37%*	*38%*	*38%*	*38%*	*38%*	*38%*	*39%*	*39%*	*39%*	*39%*	*39%*	*40%*	*40%*
Industrial Technique	**9.501**	**11.450**	**14.583**	**15.248**	**15.865**	**16.433**	**17.000**	**17.562**	**18.120**	**18.670**	**19.211**	**19.743**	**20.261**	**20.766**	**21.255**	**21.680**
YoY change	*-0,7%*	*20,5%*	*27,4%*	*4,6%*	*4,0%*	*3,6%*	*3,4%*	*3,3%*	*3,2%*	*3,0%*	*2,9%*	*2,8%*	*2,6%*	*2,5%*	*2,4%*	*2,0%*
as % of Total revenues	*11,3%*	*12,2%*	*13,9%*	*14,1%*	*14,3%*	*14,3%*	*14,4%*	*14,4%*	*14,4%*	*14,4%*	*14,4%*	*14,4%*	*14,4%*	*14,5%*	*14,5%*	*14,5%*
Equipment Sales	7.126	8.473	10.791	11.260	11.691	12.085	12.475	12.861	13.241	13.615	13.980	14.336	14.682	15.015	15.336	15.643
as % of Segment revenues	*75,0%*	*74,0%*	*74,0%*	*74%*	*74%*	*74%*	*73%*	*73%*	*73%*	*73%*	*73%*	*73%*	*72%*	*72%*	*72%*	*72%*
Aftermarket Services	2.375	2.977	3.792	3.988	4.174	4.348	4.524	4.701	4.878	5.055	5.231	5.406	5.580	5.751	5.919	6.037
as % of Segment revenues	*25,0%*	*26,0%*	*26,0%*	*26%*	*26%*	*26%*	*27%*	*27%*	*27%*	*27%*	*27%*	*27%*	*28%*	*28%*	*28%*	*28%*
Construction Technique	**11.436**	**14.422**	**16.032**	**16.587**	**17.161**	**17.756**	**18.354**	**18.954**	**19.554**	**20.155**	**20.755**	**21.351**	**21.945**	**22.532**	**23.114**	**23.576**
YoY change	*-5,6%*	*26,1%*	*11,2%*	*3,5%*	*3,5%*	*3,5%*	*3,4%*	*3,3%*	*3,2%*	*3,1%*	*3,0%*	*2,9%*	*2,8%*	*2,7%*	*2,6%*	*2,0%*
as % of Total revenues	*13,6%*	*15,4%*	*15,3%*	*15,4%*	*15,4%*	*15,5%*	*15,5%*	*15,5%*	*15,6%*	*15,6%*	*15,6%*	*15,6%*	*15,6%*	*15,7%*	*15,7%*	*15,7%*
Equipment Sales	9.263	9.951	11.062	11.394	11.735	12.088	12.438	12.786	13.132	13.473	13.810	14.141	14.466	14.785	15.095	15.397
as % of Segment revenues	*81,0%*	*69,0%*	*69,0%*	*69%*	*68%*	*68%*	*68%*	*67%*	*67%*	*67%*	*67%*	*66%*	*66%*	*66%*	*65%*	*65%*
Aftermarket Services	2.173	4.471	4.970	5.193	5.426	5.668	5.915	6.167	6.423	6.682	6.945	7.210	7.478	7.748	8.019	8.179
as % of Segment revenues	*19,0%*	*31,0%*	*31,0%*	*31%*	*32%*	*32%*	*32%*	*33%*	*33%*	*33%*	*33%*	*34%*	*34%*	*34%*	*35%*	*35%*
Mining and Rock Excavation Technique	**29.013**	**25.718**	**27.402**	**27.415**	**27.769**	**28.405**	**29.096**	**29.829**	**30.590**	**31.368**	**32.152**	**32.934**	**33.706**	**34.460**	**35.191**	**35.895**
YoY change	*-14,8%*	*-11,4%*	*6,5%*	*0,1%*	*1,3%*	*2,3%*	*2,4%*	*2,5%*	*2,6%*	*2,5%*	*2,5%*	*2,4%*	*2,3%*	*2,2%*	*2,1%*	*2,0%*
as % of Total revenues	*34,6%*	*27,4%*	*26,1%*	*25,4%*	*25,0%*	*24,8%*	*24,6%*	*24,5%*	*24,3%*	*24,2%*	*24,2%*	*24,1%*	*24,0%*	*24,0%*	*23,9%*	*23,9%*
Equipment Sales	11.605	8.487	9.043	8.138	7.528	7.152	6.844	6.598	6.406	6.265	6.171	6.122	6.116	6.153	6.233	6.357
as % of Segment revenues	*40,0%*	*33,0%*	*33,0%*	*29,7%*	*27,1%*	*25,2%*	*23,5%*	*22,1%*	*20,9%*	*20,0%*	*19,2%*	*18,6%*	*18,1%*	*17,9%*	*17,7%*	*17,7%*
Aftermarket Services	17.408	17.231	18.359	19.277	20.241	21.253	22.252	23.231	24.183	25.102	25.981	26.812	27.590	28.307	28.958	29.538
as % of Segment revenues	*60,0%*	*67,0%*	*67,0%*	*70,3%*	*72,9%*	*74,8%*	*76,5%*	*77,9%*	*79,1%*	*80,0%*	*80,8%*	*81,4%*	*81,9%*	*82,1%*	*82,3%*	*82,3%*

Appendix 8 – Discounted Cash Flow Model

(million SEK)	**2013**	**2014**	**2015**	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026	E2027	E2028
Revenues	83.789	93.755	104.988	107.927	111.133	114.695	118.318	121.983	125.669	129.359	133.034	136.679	140.279	143.676	146.937	149.876
Cost of Sales	-51.766	-58.669	-63.589	-65.835	-68.347	-71.111	-73.357	-75.630	-77.915	-80.202	-82.481	-84.741	-86.973	-89.079	-91.101	-92.923
Gross Profit	**32.122**	**35.052**	**41.399**	**42.091**	**42.786**	**43.584**	**44.961**	**46.354**	**47.754**	**49.156**	**50.553**	**51.938**	**53.306**	**54.597**	**55.836**	**56.953**
Gross Profit Margin	*38,3%*	*37,4%*	*39,4%*	*39%*	*39%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*
Marketing Expenses	-8.338	-9.825	-11.175	-11.438	-11.726	-12.049	-12.375	-12.702	-13.028	-13.351	-13.669	-13.980	-14.284	-14.563	-14.826	-15.053
Administrative Expenses	-1.631	-625	-1.050	-1.121	-1.197	-1.279	-1.365	-1.454	-1.547	-1.642	-1.740	-1.840	-1.942	-2.045	-2.148	-2.248
Depreciation and amortization	-2.703	-3.709	-4.454	-5.007	-5.320	-5.547	-5.518	-5.496	-5.481	-5.472	-5.467	-5.466	-5.469	-5.475	-5.483	-5.493
Research and Developments	-2.117	-2.933	-3.332	-3.367	-3.408	-3.455	-3.501	-3.543	-3.583	-3.618	-3.649	-3.676	-3.697	-3.709	-3.732	-3.762
Other operating income	514	573	356	373	390	410	430	450	471	493	515	537	560	575	588	600
Other operating expense	-331	-191	-191	-208	-227	-247	-267	-289	-312	-335	-359	-384	-410	-435	-461	-487
Share of profit in associated companies	7	7	7	11	11	11	12	12	13	13	13	14	14	14	15	15
Operating Profit (EBIT)	**17.056**	**17.015**	**20.848**	**21.334**	**21.310**	**21.428**	**22.376**	**23.331**	**24.288**	**25.245**	**26.198**	**27.143**	**28.079**	**28.959**	**29.789**	**30.524**
Operating Profit Margin	*20,4%*	*18,1%*	*19,9%*	*20%*	*19%*	*19%*	*19%*	*19%*	*19%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*
CAPEX	3.767	4.500	5.170	5.174	5.183	5.200	5.230	5.260	5.290	5.320	5.350	5.380	5.410	5.440	5.470	5.493
Investment in NWC	1.352	683	-522	1.305	2.489	2.076	834	520	816	815	811	803	792	746	706	639
Δ Provisions	-103	206	0	191	32	36	36	37	37	37	37	36	36	34	33	29
Effective Tax Rate	*25,7%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*	*24,30%*
Free Cash-Flow to the Firm	**10.154**	**11.612**	**15.587**	**14.869**	**13.811**	**14.528**	**16.429**	**17.414**	**17.798**	**18.483**	**19.174**	**19.866**	**20.558**	**21.244**	**21.889**	**22.497**
															Terminal Value	**502.243**

Appendix 9 – Economic Profit Model

(million SEK)	**2015**	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026	E2027	E2028
(+) Interest Bearing Liabilities	*32.232*	*35.652*	*40.328*	*44.948*	*49.545*	*54.314*	*59.251*	*64.358*	*69.631*	*75.067*	*80.664*	*86.416*	*92.310*	*98.330*
(+) Total Equity	*46.691*	*54.191*	*61.844*	*69.405*	*76.930*	*84.734*	*92.816*	*101.173*	*109.803*	*118.701*	*127.861*	*137.276*	*146.921*	*156.776*
(-) Excess Cash and Cash Equivalents	*4.994*	*14.693*	*25.012*	*35.906*	*47.332*	*59.146*	*71.356*	*83.970*	*96.991*	*110.422*	*124.260*	*138.539*	*153.205*	*168.283*
Invested Capital	**73.928**	**75.150**	**77.159**	**78.447**	**79.143**	**79.902**	**80.711**	**81.561**	**82.443**	**83.347**	**84.265**	**85.153**	**86.026**	**86.823**
NOPLAT (EBIT*(1-t))	15.782	16.150	16.132	16.221	16.939	17.661	18.386	19.110	19.832	20.547	21.255	21.922	22.550	23.107
RoIC	21%	22%	21%	21%	21%	22%	23%	24%	24%	25%	25%	26%	26%	27%
Economic Profit	**10.498**	**11.161**	**10.982**	**11.019**	**11.711**	**12.378**	**13.045**	**13.708**	**14.367**	**15.020**	**15.664**	**16.272**	**16.842**	**17.349**
													Terminal Value	**387.318**

Appendix 11 – DCF Valuation model Sensitivity Analysis

Terminal FCFF growth rate (g)	WACC												
	5%	5,25%	5,5%	5,75%	6,0%	6,25%	6,5%	6,75%	7,0%	7,25%	7,5%	7,75%	8,0%
1%	357	333	312	293	277	261	244	235	224	213	204	195	186
1,25%	373	347	324	304	286	270	251	241	229	218	208	199	190
1,5%	392	363	338	316	296	278	259	248	235	224	213	203	194
1,75%	414	381	353	329	308	288	267	256	242	230	218	208	198
2%	439	403	371	344	320	300	**276**	264	250	236	224	213	203
2,25%	469	427	392	361	335	312	287	274	258	243	230	218	208
2,5%	505	456	416	381	352	326	298	284	267	251	237	225	213
2,75%	549	491	444	404	371	342	311	296	277	260	245	231	219
3%	604	534	478	432	393	361	326	309	288	270	253	239	226

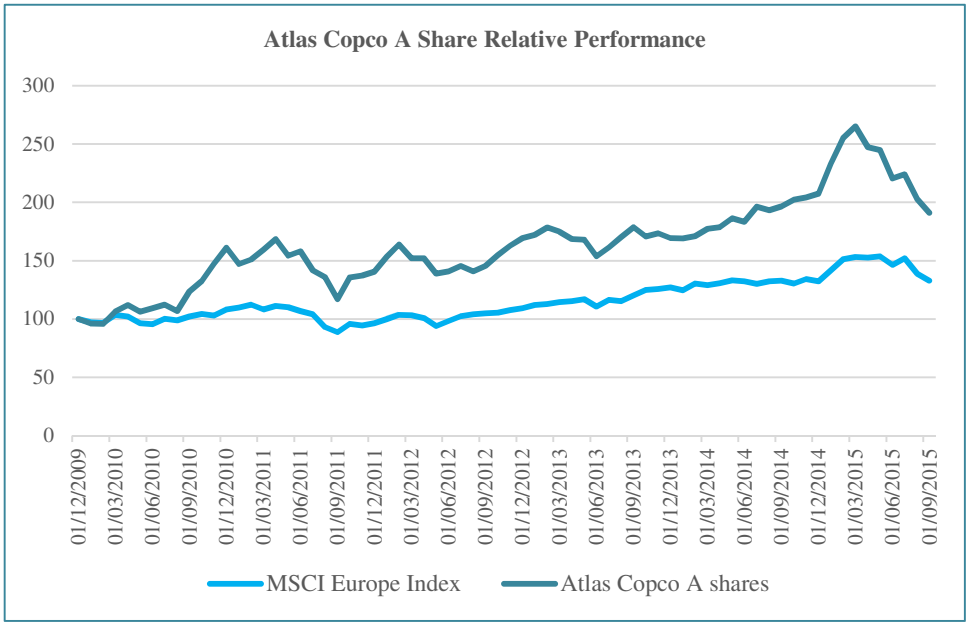
Appendix 12 – Economic Profit model Sensitivity Analysis

Terminal EP growth rate (g)	WACC						
	5%	5,5%	6%	6,5%	7%	7,5%	8%
1%	353	309	274	242	222	202	185
1,5%	383	330	290	254	231	209	191
2%	422	358	309	**267**	242	218	197
2,5%	477	394	334	284	255	227	205
3%	560	445	368	306	272	240	214

Appendix 13 – Historical Effective Tax Rate

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Effective Tax Rate	31,6%	31,9%	29,6%	23,7%	24,1%	26,3%	24,8%	24,9%	25,7%	24,3%	24,3%

Appendix 14 – Atlas Copco Share Price Vs MSCI Europe Index



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